

SOUTH CAROLINA
DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF LABORATORIES

SERVICES GUIDE

EARL HUNTER
COMMISSIONER

HAROLD DOWDA, Ph.D.
DIRECTOR, BUREAU OF LABORATORIES

EIGHTH EDITION
2001

SERVICES GUIDE
DHEC Bureau of Laboratories

TABLE OF CONTENTS

INTRODUCTION	iii
Purpose of Manual	
History of Laboratory	
 I. ADMINISTRATION	
ORGANIZATION	
Bureau Address and Business Hours	I-1
Organization & Contact Persons	I-2
Certification & Accreditation	I-4
 TESTING POLICIES	I-5
Persons Authorized to Order Tests	I-5
Verification of Orally Ordered Tests	I-5
Requesting Repeat Testing on Serological Specimen	I-5
Requesting Additional Testing on Specimen	I-5
When no test specified on form	I-6
Specimens Referred to CDC	I-6
Specimen Rejection Criteria	I-7
Marriage License Testing (all states).....	I-8
Stock Reference Culture	I-9
Vector Control	I-9
Disease Reporting	I-9
 RESULTS REPORTING POLICIES	I-10
 II. ORDERING SUPPLIES, SPECIMEN COLLECTION AND SHIPPING	II-1
ORDERING SUPPLIES	II-1
Collection Kits and Mailing Containers	II-1
Test Request Forms	II-2
List of forms Available	II-2
General Instructions	II-3
County Codes	II-4
Sender & Billing Numbers	II-5
DHEC Program Numbers	II-6

SPECIMEN COLLECTION PROCEDURES.....	II-7
Venipuncture	II-7
Capillary Blood	II-8
Dried Blood Spots for Newborn Screening	
Heel-stick Procedure	II-8
Dried Blood Spots for HIV	
Finger-stick Procedure	II-10
Blood Collection for Blood Lead.....	II-11
Culture Specimens	
1. Bacterial Culture	
Stool for Enteric Pathogens	II-14
Throat for Group A Strep and Diphtheria	II-17
Beta-hemolytic Streptococcus Group B	II-24
<i>Bordetella pertussis</i>	II-25
<i>Neisseria gonorrhoea</i>	II-27
2. <i>Chlamydia trachomatis</i>	II-31
3. Fungal Culture	
Hair, Skin & Nails	II-35
Sputum	II-37
4. Mycobacterium (TB)	II-39
5. Mycoplasma/Ureaplasma.....	II-45
6. Viral Culture	
Enterovirus Culture (Stool)	II-47
Enterovirus & Respiratory Virus Culture (Throat).....	II-17
<i>Herpes simplex</i>	II-49
Other Specimens	
GC/Chlamydia (Gen-Probe)	II-52
Oral Fluid for HIV	II-54
Ova & Parasites (stool)	II-55
Pinworm Prep.....	II-58
Skin Scrapings for Scabies	II-60
Urine Drug Screen Chain-of-Custody	II-61
 LABELING, PACKING, & MAILING SPECIMENS	
Shipping Specimens by U.S. Mail	II-65
Shipping Specimens by Courier	II-68
Delivering Specimens to Laboratory	II-69

TABLE OF CONTENTS, PAGE 3

III PANELS & TESTS	III-1
Panels only Available to DHEC Clinics	III-1
Tests Available with Test Information	III, 3-49
IV. FEES AND BILLING PROCEDURES	IV-1
TEST FEES.....	IV-1
Test Fee Policy.....	IV-1
Test Charges for General Public	IV-2A
Test Charges for DHEC clinics	IV-2B
BILLING PROCEDURE.....	IV-3

INTRODUCTION

Purpose of Manual

The purpose of this manual is to provide our clients with information about the laboratory services available and to provide a guide for submitting specimens for analysis.

This eighth edition of the Services Guide is the first edition to be put on the Internet web site. It is also available in unbound hard copy upon request. Notify the laboratory at 803-896-0941.

Note to DHEC county staff:

This edition replaces those portions of the nurses laboratory manual which pertain to the services of the Bureau of Laboratories. It does not contain the sections on tests and procedures performed at the local health departments. Therefore, the nurses manual should be retained for this information.

History

The Bureau of Laboratories, S.C. Department of Health and Environmental Control is a multi-disciplinary, integrated source of diagnostic services including analytical support and consultation for physicians, private laboratories and county health departments. The Bureau of Laboratories is prepared to assist in any national public health emergency.

The State Public Health Laboratory opened its doors on July 1, 1908 on the University of South Carolina campus with a staff of one. During the first year, specimens were examined for typhoid, tuberculosis, diphtheria, intestinal parasites, water pollution and rabies. Today the Bureau of Laboratories has a staff of 100 and is housed in a separate laboratory building with a specialized air handling system designed for processing any infectious, toxic, or carcinogenic material except the most highly infectious organisms such as Marburg, Lassa and Ebola viruses.

The mission of the Bureau of Laboratories is to provide laboratory-based health and environmental assessments for accurate diagnosis, prevention and surveillance of infectious and chronic diseases, congenital disorders and environmental hazards to reduce the incidence of illness and death and to improve the quality of life among the people of the state.

SECTION I
ADMINISTRATION

BUREAU ADDRESS

The Bureau of Laboratories is located in the James A. Hayne Building at 8231 Parklane Road, Columbia, S.C., on the campus of the State Park Health Center. State Park is located between Highway 555 (Farrow Road), Parklane Road and the 1-77 connector (Bull Street extension or S.C. 277), two miles north of 1-20 and 2 miles west of Columbia Mall. See map below.

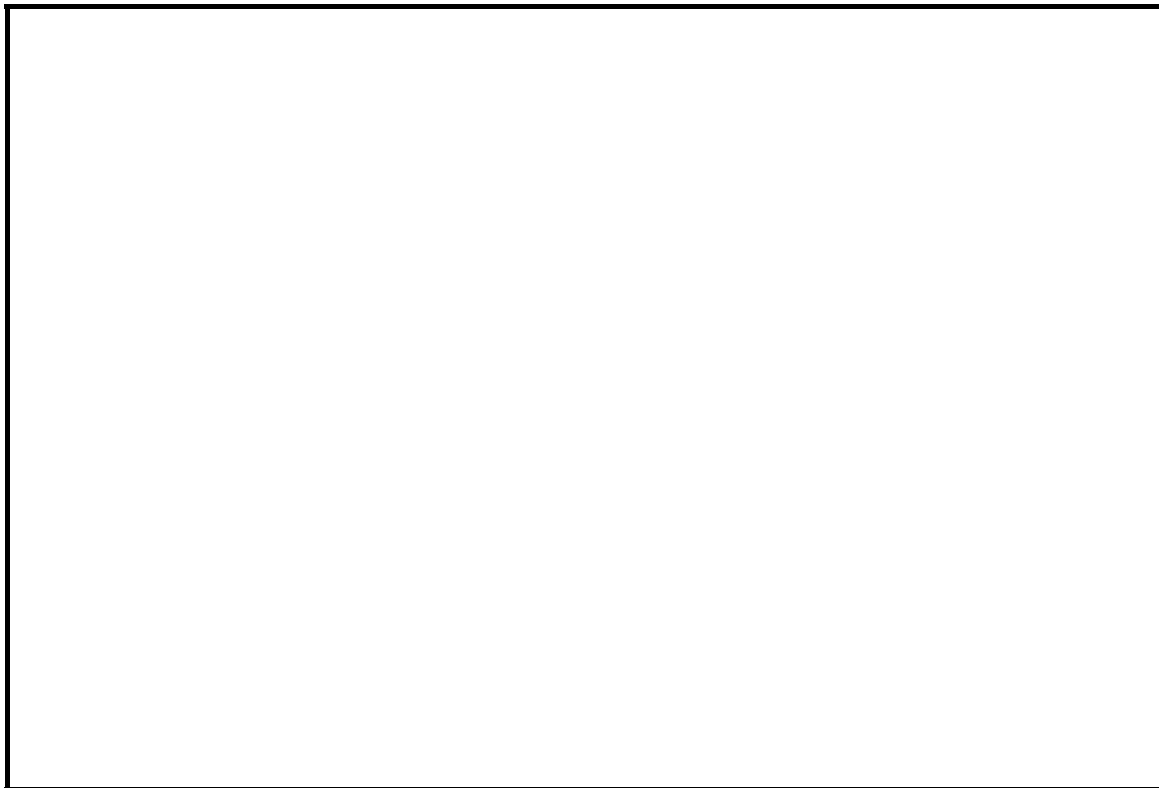
Using the Parklane Road Entrance, the Hayne Building is at the end of the first left turn.

HOURS OF BUSINESS

The official working hours are from 8:00 A.M. to 4:30 P.M. Monday through Friday.

There is a night depository for specimen delivery after hours. See [*Shipping Specimens by Courier*](#).

A call schedule is operative for emergency procedures. In case of an emergency after hours or on weekends, please call 896-0800.



INSERT ORGANIZATIONAL CHART

CONTACT PERSONS AND PHONE NUMBERS

For calls during regular working hours, pertinent numbers are listed below.

Reports.....	896-0897
Laboratory Request Forms.....	896-0913
Mailing Containers	
Bureau Director..... Harold Dowda, Ph.D.....	896-0801
Director, Diagnostic Microbiology Division.....ArthurWozniak, Ph.D	896-0965
Director, Analytical Chemistry Division.....Thomas M. Hickey, Ph.D	896-0964
Director, Clinical Marc S. Busnardo, M.D.....	896-0658
Pathology Division	
Director, Operations..... Sarah J. Robinson, M.A. (Acting).....	896-0941
Division	
Director, Facilities Management Division..... David C. Rivers.....	896-0923
Laboratory Instrument Services.....	896-0919
Director, Office of Quality Assurance.Roberta Bartholdi, M.S. MT(ASCP).....	896-3897
Director, Office of Laboratory Safety..... Connie Gray, M.P.H.	896-0956

LABORATORY ACCREDITATION AND CERTIFICATION

All laboratories testing human specimens for the diagnosis, prevention, or treatment of any disease, or impairment of, or the assessment of the health of human beings, must be certified by the Department of Health and Human Services under the Clinical Laboratory Improvement Amendments of 1988 (CLIA-88) to operate. Forensic drug testing requires special accreditation which is provided by the College of American Pathologists and the Occupational Safety and Health Association provides additional accreditation for blood lead analysis.

Environmental testing is not covered under CLIA-88 .

The American Industrial Hygiene Association (AIHA) and the Food and Drug Administration (FDA) provides accreditation for environmental testing, and food and dairy products.

The Bureau of Laboratories is certified and accredited as follows.

CLINICAL TESTING - CLIA ID # 42D0658606

FORENSIC DRUG TESTING - CAP # 14209-01

BLOOD LEAD ANALYSIS - OSHA

INDUSTRIAL HYGIENE - AIHA # 42

ENVIRONMENTAL LEAD - AIHA # 9041

DAIRY PRODUCTS - FDA # 45001

TESTING POLICIES

PERSONS AUTHORIZED TO ORDER TESTS:

The Bureau of Laboratories will accept clinical laboratory specimens from physicians, health departments, or institutions which will be responsible for receiving, relating, interpreting, and distributing the data. A clinical laboratory specimen is described as any material derived from the human body for the purpose of diagnosis, prevention, treatment or assessment for medical or legal purposes. Clinical laboratory specimens for drug-of-abuse testing from other sources (legal entities) will be accepted with prior approval of the appropriate laboratory Bureau manager. Inanimate substances and other samples submitted for examination (e.g., animal heads for rabies, asbestos, etc.) may be accepted from private citizens at the discretion of the Bureau director or section manager.

VERIFICATION OF ORALLY ORDERED TESTS:

When additional tests are requested by telephone, the caller must follow up with a written request sent to the attention of the section manager. The specimen is held until the written or fax request reaches the laboratory. The specimen and request will then be processed as usual. With time critical tests, the specimen may be tested immediately but results will be held until the written request is received. No HIV tests will be performed without written request at the time of testing. All specimens will be discarded if a written request is not received within seven working days. **Requests can be faxed to 896-0988.**

REQUESTING REPEAT TESTING ON A SEROLOGY SPECIMEN

Specimens are discarded after seven working days. A retest request must be made within that time period. To request a repeat serology test call Diagnostic Serology, (803) 896-0811. Repeat testing on the same specimen may not always be indicated. The caller may be asked to briefly provide some patient clinical information and history to assist in determining the best approach. In some cases, a second (new) specimen for testing may be recommended. In other cases, the patient's clinical history may provide an explanation for the initial result, and retesting may not be necessary.

REQUESTING ADDITIONAL TESTS ON SPECIMEN

Additional test requests on a specimen already at the laboratory can be made if within the seven working day time frame by calling the Specimen Accessioning Section at (803)-896-0897.

NO TEST SPECIFIED ON MULTIPLE TEST FORM:

When a multiple test requisition form is received without a test (s) specified, a report is generated to the sender requesting the desired test be written at the bottom of the form and the form returned to the Laboratory. Upon receipt of the form, processing will take place. Specimens will be discarded after seven working days. If the specimen will be rendered untestable by delay, the sender will be telephoned requesting the needed information by fax.

SPECIMENS REFERRED TO THE CDC

Specimens to be referred to the Centers for Disease Control (CDC) for examinations not performed in this laboratory must be submitted to the Bureau of Laboratories for processing and assignment of an accession number. A special CDC form 50.34 must be completed before the specimen will be accepted by CDC for testing.

Specimens sent directly to CDC without prior Bureau of Laboratories approval may be returned to the Bureau of Laboratories. These will be recorded, assigned a SC number and resubmitted to CDC. This will incur unnecessary delay in testing.

In special cases where time is critical, senders may request direct submission to CDC. An Accession number will be assigned and a form sent to the requestor to be submitted with the specimen.

If unusual circumstances exist or help is needed, contact the Laboratory Director at 896-0801.

SPECIMEN REJECTION CRITERIA

1. Unsatisfactory Specimens

The Bureau of Laboratories will not examine and will discard specimens which are in unsatisfactory condition; i.e., too hemolyzed, chylous, contaminated, too old, improperly stored during shipment, nonviable, decomposed, etc. The reason for the rejection will be reported to the sender on the standard laboratory report form.

Specimens that have some degree of hemolysis, are icteric, or chylous, will be examined if the degree of hemolysis or lipemia does not interfere with the examination. The undesirable condition will be indicated on the report form.

2. No Specimen

When a request form is received without a specimen, a computer inquiry is made to determine if the specimen has been received with another test request. If so, the specimen is obtained and aliquoted for all tests. If no specimen is found, the request form is numbered, processed, and reported "No specimen received."

3. No Information

If a specimen is received without a request form and the sender cannot be identified from the specimen label, the specimen will be held for seven days awaiting telephone inquiry or delayed receipt of form. After seven days the specimen is discarded.

4. Unlabeled and Mislabeled Specimens

When an unlabeled or mislabeled specimen is received, it will not be tested.

An exception may be made for a specimen that cannot be recollected because of its unique anatomic source, collection method or time of collection. Examples include: CSF, abscess, abdominal, ascites, bile; peritoneal, pleural, and synovial fluids; autopsy, biopsy, or organ specimens; lower respiratory tract specimens obtained by bronchoalveolar (BAL), bronchial brushing or washing (BBW), or by tracheal aspiration; timed collections; and specimens collected prior to the initiation of antimicrobial therapy. Routinely collected blood, urine, feces, or sputum specimens are not exceptional, i.e., they are re-collectable. A mislabeled specimen may not be known until the laboratory is notified that a report is in error because no specimen was collected from the patient. If the laboratory records are in order (the report, request and specimen are identified with the same names), the report will be remailed with a disclaimer. The submitting facility will be requested to submit a repeat specimen and request if it is known which patient should have been tested.

PREMARITAL TESTING FOR OUT-OF-STATE LICENSES

There is no premarital testing requirement to obtain a marriage license in South Carolina.

The Bureau of Laboratories has the required premarital forms from all states with premarital testing requirements.

A signed form for the state named will be returned to the requesting facility along with the result report. Call 896-0801 for additional information.

TABLE 4
STATES REQUIRING PRE-MARITAL TESTING

<u>STATE</u>	<u>TEST(S)</u>
ALABAMA	Syphilis
CALIFORNIA	Syphilis, Rubella (Also Physical Exam with certificate that HIV has been offered)
CONNECTICUT	Syphilis, Rubella (F,<50 YRS..)
GEORGIA	Syphilis, Rubella (F) and offer of sickle cell test
HAWAII	Rubella (F)
INDIANA	Rubella (F)
MASSACHUSETTS	Syphilis
MICHIGAN	Certificate of counseling and offering of testing
MISSISSIPPI	Syphilis
MONTANA	Rubella (F), exemption granted by physician's decision
NEBRASKA	Rubella (F)
NEW JERSEY	Syphilis, Physical Exam
NEW MEXICO	Syphilis, Rubella (F,<45)
OKLAHOMA	Syphilis
PENNSYLVANIA	Syphilis, Physical Exam
RHODE ISLAND	Syphilis, Rubella (F), HIV (unless waiver signed)
WEST VIRGINIA	Syphilis, Physical Exam
WYOMING	Rubella (women capable of child-bearing)
DISTRICT OF COLUMBIA	Syphilis
PUERTO RICA	Syphilis

F = FEMALES

STOCK REFERENCE CULTURES

The Bacteriology, Mycobacteriology, and Mycology Sections maintain a stock culture collection of well-characterized strains of organisms. Subcultures of organisms to be used as reference or control cultures are available upon request to public and private laboratories and teaching institutions. Request by students must be signed by an official of the institution. Requests for stock cultures should be made to the manager of the particular section.

All initial requests for cultures are filled without charge. Repeat requests for the same organisms will be charged a \$5.00 service fee.

VECTOR CONTROL

The Bureau of Environmental Health provides services to physicians for the identification of insects which have bitten or stung patients. Insects to be identified may be shipped dead or alive to the Bureau of Environmental Health, General Sanitation Division, 2600 Bull Street, Columbia, S.C. 29202. Dead insects should be preserved in alcohol or formalin. The insect will be identified and the physician notified of the identity and the public health significance of the specimen. The telephone number is 803-896-0655.

DISEASE REPORTING

The Code of Laws of South Carolina (1976) Section 44-29-10: Regulation 61-20 mandates that the Commissioner of DHEC is to publish annually a [list of diseases to be reported](#) by physicians and laboratories.

The function of the Bureau of Preventive Health Services is the control of communicable disease. A surveillance system is maintained consisting of death certificates and morbidity reporting from physicians, private and public health laboratories, university and college health centers, hospital-based physicians, District Medical Directors, and County Health Officers.

All communicable disease outbreaks and unusual disease occurrences should be reported so that appropriate control measures can be implemented.

RESULTS REPORTING POLICIES

All laboratory reports generated are considered confidential information. The reports will be released only to authorized persons. Laboratory reports are computer generated. Electronic transfer of results is available to DHEC county health departments and some private sector clients. Contact the laboratory at 896-0810 for information.

Electronic reports are delivered twice daily, and hard-copy reports are mailed at the end of the working day.

Copies sent:

1. Newborn screening: One copy is sent to the hospital submitting the specimen and one to the physician whose name has been entered on the request form.
2. Rabies testing: One copy is sent to the sender and one to the county health department.
3. All other tests: One copy is returned to the name entered in the sender section of the request form.

We regret that we cannot honor requests for multiple copies. If multiple copies are needed, we suggest you photocopy the original report issued.

Remailing - If for some reason, you do not receive a report, you may obtain a copy by calling 896-0898.

If an error in reporting is discovered, the laboratory should be notified immediately. The error will be corrected and a corrected report will be mailed. The corrected report will be printed with the comment ACorrected Report.@

Telephone results:

Results indicating life-threatening conditions or a public health emergency will be telephoned immediately to the authorized person requesting the test.

11

**ORDERING SUPPLIES
SPECIMEN COLLECTION
& SHIPPING**

ORDERING SUPPLIES

The Bureau of Laboratories will provide request forms, kits and media and mailing containers for the collection and shipping of laboratory specimens. These supplies are provided free of charge. Please use them judiciously and only to send laboratory specimens to the Department of Health and Environmental Control. Physicians, hospitals, private laboratories, county health departments and other state agencies may obtain forms and collection supplies by indicating the quantity required on DHEC form 1323, **A**Request for Laboratory Supplies,**@**and mailing this form to the Bureau of Laboratories. You may call 896-0913 to request this ordering form or to request supplies in an emergency.

Mailing Containers:

When ordering mailing containers, please specify the size and/or the quantity desired.

The following containers are to be used for only one specimen:

Rabies Container	Enteric Outfit
Sputum Outfit	Dry Swab Outfit
Water Containers	Parasitology Outfit

Color Coded Mailing Container Labels:

Yellow Labels---Mycobacteriology (Tuberculosis)

Blue Labels---Parasitology (Stool for Ova and Parasites)

Pink Labels---Enteric Bacteriology

White Labels with Blue Border --- All other type specimens

Kits containing transport medium:

Transgrow Medium for GC Culture

Viral Transport Medium, 5ml, (Throat wash)

Gen-Probe Collection Kit for GC/Chlamydia

Viral Transport Medium, 2 ml

Antigen Detection (Specify Male or Female)

Influenza Transport Medium

2 SP Medium for Chlamydia Culture

Mycoplasma hominis/Ureaplasma Transport Medium

Bordetella pertussis Transport medium

Enteric Outfit for **Salmonella, Shigella, Yersinia,**

Staph, B cereus, and E. coli 0157 Culture, Campylobacter, Vibrio*

***Note: The enteric transport medium has changed from buffered glycerol saline to Cary-Blair.**

Supplies

Biohazard Bags

Envelopes (for Newborn Screening and He blood spots)

Urine Containers

Integrity Seals

Evidence Tape

Cardboard boxes

Cylindrical Cardboard Containers, screw cap

4" x 4" x 4"

No. 10--6" x 22 "

6" x 6" x 6"

No. 20--6" x 4"

8" x 8" x 8"

No. 30--6" x 5"

Lab Mount Sheets (CHD's only)

Request Forms

The forms provided by the Bureau of Laboratories are listed below.. Most forms will be sent with your name, address and sender number preprinted. Since an over-supply cannot be returned to stock, please use discretion in the number you request.

A separate DHEC form 1323 must be submitted for each location with a unique sender number.

1323	Request for Lab Supplies (8/00)	Card stock/buff
1301	+Immunology (2/94)	White
1306	+Mycobacteriology (1/00)	Gold
1308	+Rabies (02/98)	Lt. Maroon
1310	+Forensic Urine Drug Testing (chain-of custody)	Aqua
1311	+Lead Analysis (9/99)	Green
3445(1325B)	+Gonococcal/Chlamydia Infection (8/00)	Orange
1327	Newborn Screening (1/97) (good thru 02)	White with green lettering
1333	+Mycology (5/96)	Lavender
1334	+Parasitology (9/90)	Aqua
1336	+Prenatal (9/98)	Brown
1337	+Virus Isolation/Herpes (9/94)	Red
1339	+Hemoglobin Electrophoresis (3/95)	Lt. Green
1340	+Drugs of Abuse Testing (8/96)	Purple
1341	+Clinical Chemistry (4/00)	Brown
1344	+Special Chemistry (8/91)	Green
1345	+Bacteriology (5/96)	Orange
1348	+Asbestos (11/86)	Green
1357	+Hematology/Urinalysis (8/93)	Brown
1359	+Syphilis Serology/HIV Hepatitis (4/97)	Gray
1362	+GYN Cytology (8/99)	Red
1387	+Lymphocyte Subset Panel (9/94)	Pink

+Preaddressed

The following are used by DHEC district laboratories only:

1360	*General Laboratory Request/Report Form	White
1361	*Laboratory Request/Report Form (Sexually Transmitted Diseases)	White

*These forms are available from Central Supply in the Sims/Aycock Building.

INSTRUCTIONS FOR COMPLETING THE TEST REQUEST FORM

Please note the highlighted areas on the forms you receive. These are the data elements that will appear on your result report. Information entered in other areas on the report form will not be returned to you on the result report. It is requested that all entries be typed or printed and all information be provided.

1. Date Received and Laboratory Specimen Block (upper right corner) - for our laboratory use only.
2. Patient Name: Enter last name, first name and middle initial, skipping a space between each name.
3. Patient Birth date: Enter month, day, year. Example: September 1, 1983 is written 09-01-83.
4. Race: Insert appropriate initial as outlined below:

W or 01 - Caucasian	06 - Hawaiian
B or 02 - Black	07 - Filipino
03 - Aleut	08 - Other Asian or Pacific Islander
04 - Chinese	00 - Other races
05 - Japanese	09 - Unclassifiable
5. Sex: Mark "X" in the appropriate box.
6. Patient I.D. No.: Enter patient's social security number or DHEC ID if DHEC clinic.
7. Other I.D./Physicians: To further identify or route the report. Numbers or letters may be used. Example: Patient's medical record number
8. Diagnostic Code: Enter ICD-9 code (only required for Cytology)
9. County of Residence: Write the code number for the county in which the patient lives ([see Table 1](#))
10. Sender's Name and Mailing Address: If not pre-addressed, enter a complete postal mailing address.
11. Sender Number: This number is used in the computer system to determine where the results will be sent. Most forms will be pre-addressed with the sender name, address and number. [See Table 2 for Sender numbers.](#)
12. Billing Number: This number is necessary only if the test is to be billed to someone other than the sender. It is assigned by the Bureau of Laboratories. Call 896-0810 to obtain a number.
13. Program Number: This space is to be completed only on specimens being submitted by County Health Departments. [See Table 3 for the appropriate code numbers.](#)
14. Medicaid Number: If test can be billed to Medicaid, complete this space.
15. Specimen Information: Mark appropriate boxes. Enter date collected. (This sometimes appears in another location on the form.)
16. Other Information: This section is for other information pertinent to the test(s) requested. Please complete as indicated.
17. Test Request: Mark test requested. This item determines the test(s) that will be performed.
18. Sender's Copy: Tear off back copy of the request form and file for future reference as necessary.

TABLE 1
COUNTY CODES

Abbeville	01	Greenwood	24
Aiken	02	Hampton	25
Allendale	03	Horry	26
Anderson	04	Jasper	27
Bamberg	05	Kershaw	28
Barnwell	06	Lancaster	29
Beaufort	07	Laurens	30
Berkeley	08	Lee	31
Calhoun	09	Lexington	32
Charleston	10	Marion	33
Cherokee	11	Marlboro	34
Chester	12	McCormick	35
Chesterfield	13	Newberry	36
Clarendon	14	Oconee	37
Colleton	15	Orangeburg	38
Darlington	16	Pickens	39
Dillon	17	Richland	40
Dorchester	18	Saluda	41
Edgefield	19	Spartanburg	42
Fairfield	20	Sumter	43
Florence	21	Union	44
Georgetown	22	Williamsburg	45
Greenville	23	York	46

TABLE 2 SENDER NUMBERS

Private Physician-	Use your S.C. Medical License number preceded by the letter AM@
Group Practice-	A number preceded by the letter AG@ will be assigned to group practices, at their request. Use of the group number will insure that a single bill will be sent for tests submitted by all physicians in the practice. If you desire to be billed in this manner, please contact 896-0810 for assignment of a group number. If each physician wishes to be billed separately, use the appropriate Medical
License	number.
Hospital-	Use the hospital license number preceded by the letter AH@ . If the test result is to be mailed directly to the patient's physician, use the physician's name and address and sender number in the appropriate spaces on the form, but write the hospital license number preceded by AH@ in the billing number space.
Private Laboratory	A number assigned by the Bureau of Laboratories. If not known, contact the Bureau at 896-0810 for assignment.
DHEC County Health Depts.	The assigned county code number preceded by a AC@

BILLING NUMBERS

A billing number is only necessary if the test is to be billed to someone other than the sender. It is assigned by the Bureau of Laboratories. Call 896-0810 to obtain a number.

TABLE 3

PROGRAM NUMBERS

Used only when billing to a DHEC Program

0001	Maternal and Child Health
0002	Children's Rehabilitative Services
0003	Children's Health
0004	Family Planning
0005	Sickle Cell Program
0007	Cancer Control
0008	Heart Disease Control
0009	Tuberculosis Control
0010	Chronic Disease Detection
0011	Venereal Disease Control
0012	Home Health Services
0017	Migrant Health
0018	Household Sex Contact - Positive Mother
0025	District/Health Dept. Program
0027	Metabolic Screening Program
0028	Lead Poisoning Project
0035	STD Enhanced Project
0043	Environmental Sanitation
0050	Early And Periodic Screen, Diagnosis and Treatment
0053	Edisto HIV/AIDS Consortia
0054	Medicaid Eligible
0063	Employee Health Services
0070	Communicable Disease Control
0072	HIV-AIDS Alcohol & Drug Abuse Referrals
0089	Health Hazard Evaluation
0095	WIC
0099	Indigent (Not Eligible For Medicaid)
0101	High Risk Maternity
0110	STD-Chlamydia Study
0111	AIDS Bureau Of Preventive Health Services
0125	Lead - Door to Door Collection
0202	Immunization Program
0203	Hepatitis B - Infants & Children Contacts
0204	ICSC Syphilis Project

SPECIMEN COLLECTION PROCEDURES

VENIPUNCTURE PROCEDURE

Precaution:

Wear Gloves while collecting and preparing blood for shipment.

Collection Procedure:

1. Explain the procedure to the patient.
2. Position the patient for taking blood.
3. Apply tourniquet to the arm just above the elbow and instruct patient to make a fist.
4. Select the best vein and cleanse the skin over the site with 70% alcohol; allow to dry.
5. Use sterile needle screwed on unsterile adaptor. Vacuum collection tube may be inserted into the adaptor without danger of breaking the vacuum.
6. Insert the needle into the vein and collect required tubes of blood.
Note: Collect blood in plain (red stopper) tubes before collecting blood in tubes with additives (e.g. EDTA) Mix tubes with additives well to prevent clotting.
7. Release tourniquet, withdraw needle from vein, apply pressure on venipuncture site with dry sponge (cotton). Do not cover the injection site with an alcohol sponge while withdrawing needle.
8. Have patient apply pressure on the venipuncture site for 2-3 minutes to prevent leakage of blood under the skin and formation of a hematoma. When site no longer bleeds, a bandage may be applied if desired.
9. Label specimen tube with proper patient identification information.
10. Complete all requested information on the test request form.
11. Properly dispose of needles (in biohazard puncture proof sharps container) and other contaminated materials used during venipuncture.

Specimen Preparation:

1. Allow the tube of blood to remain undisturbed in an upright position at room temperature for 20-30 minutes.
2. After clot has formed gently loosen clot at the top; "rim" with a sterile applicator stick if necessary.
3. Centrifuge tubes for 10-15 minutes.
4. Remove serum carefully with sterile transfer pipet and transfer to a clean sterile rubber-stoppered tube or to a screw-top vial. Avoid transferring any red cells.
5. Label tube or vial with patient's name and/or code number running up the tube. **Do not wrap around or Flag the label by pressing ends together and extending from the tube.**
6. Store tubes of labeled serum in refrigerator (4E-6EC) until ready to ship to the laboratory.

If sending whole blood in vacutainer tube, omit steps 2-4

If using separator (gel) tubes omit steps 2 and 4 above. Be sure gel forms a distinct barrier between serum and clot.

DRIED BLOOD SPOTS FOR NEWBORN SCREENING HEEL-STICK PROCEDURE

The filter paper to be used in the collection of the specimen for the initial testing is attached to DHEC form 1327. Pre-addressed envelopes for mailing are also available upon request. This form is not pre-addressed because of the filter paper.

Blood should be collected **at least 24 hours after birth** or as closely as possible to the time of discharge from the hospital if discharged early. Specimens collected from infants receiving only non-lactose containing feedings must be clearly marked as such. Sufficient blood must be obtained to fill each circle by making a single application of the blood to the filter paper. The filter paper should touch only the drop of blood and should not be pressed against the skin around the puncture. Be sure that the filter paper is saturated with blood through to the other side. This may be done by heel puncture using a disposable blood lancet while holding the infants limb in a dependent position (Figure 8). **PLACING THE INFANT'S FOOT IN WARM WATER, OR WRAPPING IN A MOIST TOWEL OR DIAPER, AT A TEMPERATURE NO HIGHER THAN 42 C FOR 3 MINUTES**, aids in getting sufficient circulation to collect an adequate sample. Do not superimpose blood drops--this leads to inaccurate results.

When properly filled, the blood spot will be the same size on both sides of the filter paper. Do not send the specimen if the circles are not completely filled--collect a second sample. All the circles are needed if tests have to be repeated or additional tests run. After the filter paper specimen has been allowed to dry at room temperature for 4 hours or overnight, place in the mailing envelope. Mail samples to the laboratory within 24 hours after collection by first class mail.

PITFALLS

1. Failure to wipe off alcohol residue may dilute the specimen and adversely affect test results.
2. Puncturing the heel on posterior curvature will permit blood to flow away from puncture, making proper spotting difficult. **DO NOT LANCE ON PREVIOUS PUNCTURE.**
3. Milking or squeezing the puncture may cause hemolysis and ~~A~~admixture of tissue fluids with specimen.
4. Capillary tubes may be used; however, we do not recommend this procedure since application of blood with a capillary tube results in scratching the surface of filter paper, adversely affecting test results.
5. Avoid touching area within circle before collection of blood spots on filter paper. Do not allow water, feeding formulas, antiseptic solutions, etc. to come in contact with the sample.
6. Do not place filter paper in the envelope until thoroughly dry.
7. **INSUFFICIENT DRYING ADVERSELY AFFECTS TEST RESULTS.**
8. **DO NOT SHIP DRIED BLOOD SPOT SPECIMENS IN PLASTIC BAGS.**

DIRECTIONS FOR COLLECTING NEONATAL BLOOD SPOT SPECIMENS

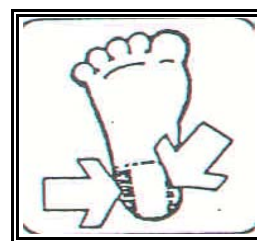
- 1.1 Cleanse infant's heel with 70% rubbing alcohol)
- 1.2 Allow heel to air dry

isopropyl alcohol (use only

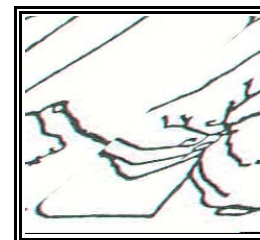


- 1.3 The puncture should be made (example above)

within the circle spot

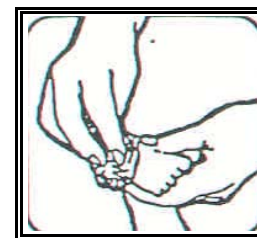


- 1.4 Using lancet, perform puncture



- 1.5 Gently wipe off first drop of blood ball. (initial drop contains tissue)

with sterile gauze or cotton



- 1.6 Wait for spontaneous free flow of

blood.

- 1.7 Apply gentle pressure with thumb

and ease intermittently as drops of blood form.

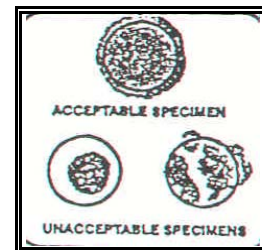
1.8 Touch printed side of filter paper card to the blood drop and fill each printed circle with a SINGLE application of blood. Observe the saturation of each printed circle as the blood flows through the filter paper. Spotting should be done only on the printed side

Do not layer successive drops of blood on the circle. Circle spot. If blood flow diminishes, repeat steps 1.1-1.8 to completely fill circles.

1.9 Allow blood specimen to AIR DRY thoroughly on level non-absorbent surface such as a plastic coated test tube rack at least 4 hours at room temp. (Do NOT stack or heat).

1.10 Place dried filter paper forms into mailing envelope provided. Mail specimen w within 24 hours.

Permission has been granted to use portions of the test of LA4-P, A Specimen Collection on filter paper for neonatal Hypothyroid Screening Programs; by the National Committee for Clinical Laboratory Standards.



DRIED BLOOD SPOTS FOR HIV TESTING FINGERSTICK PROCEDURE

If a serum specimen cannot be obtained for HIV testing, dried blood spots from capillary blood may be substituted. The filter paper to be used in the collection of dried blood spots for HIV testing is attached to DHEC form 1339, the HEMOGLOBIN ELECTROPHORESIS/HIV REQUEST FORM. The block, 230 BLOOD SPOT HIV 1, in the lower right-hand corner must be checked.

Sufficient blood must be obtained from the puncture to fill each circle by making a single application of the blood to the filter paper. The filter paper should touch only the drop of blood and should not be pressed against the skin around the puncture. Be sure that the filter paper is saturated with blood through to the other side. Do not superimpose blood drops--this leads to inaccurate results.

For infants less than one year puncturing the heel is recommended (NCCLS, 1989).

[See heel-stick procedure](#), page II-9 For older patients finger stick capillary blood is satisfactory:

1. Cleanse the 3rd or 4th finger with alcohol and dry with sterile gauze.
2. Puncture finger with sterile, disposable lancet.
3. Wipe away first drop of blood.
4. When next large drop of blood appears, touch filter paper circle to blood. Do not touch the filter paper to the skin.
5. Make single applications filling each circle. Do not superimpose blood drops.
6. Allow the specimen to dry at room temperature for 24 hours.

When properly filled, the blood spot will be the same size on both sides of the filter paper. Do not send the specimen if the circles are not completely filled--collect a second sample. All the circles are needed if tests have to be repeated or additional tests run. After the filter paper specimen has been allowed to dry at room temperature, place in the mailing envelope for shipping to Bureau of Laboratories.

PITFALLS

1. Failure to wipe off alcohol residue may dilute the specimen and adversely affect test results.
2. Puncturing the heel on posterior curvature will permit blood to flow away from puncture, making proper spotting difficult. **DO NOT LANCE ON PREVIOUS PUNCTURE.**
3. Milking or squeezing the puncture may cause hemolysis and admixture of tissue fluids with specimen.
4. Use of a capillary tube is not recommended since application of blood with a capillary tube results in scratching the surface of filter paper, adversely affecting test results.
5. Avoid touching area within filter paper circles before blood is applied.
6. Do not place filter paper in the envelope until thoroughly dry.
INSUFFICIENT DRYING ADVERSELY AFFECTS TEST RESULTS.

BLOOD LEAD SPECIAL COLLECTION PROCEDURES

Principle: Measurement of Blood Lead (Pb) Levels:

Venipuncture is the preferred method of specimen collection for blood lead determinations. Finger-stick and heel-stick specimens are acceptable, but require more rigorous cleaning and attention to detail to prevent contamination of the specimen during collection. All three collection methods provide a quantitative result. Collection materials, forms, instructions, shipping containers etc. are provided by the laboratory.

Preparation :

Routine procedures for the collection and handling of potential infectious materials should be observed. The collector should wash his hands and glove with dust-free gloves before preparing the patient for specimen collection. **Gloves which have dust on the exterior surface should be rinsed off with tap water.**

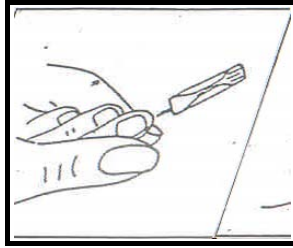
1. VENIPUNCTURE.

- a. Scrub the collection site with an alcohol wipe.
- b. Dry with gauze.
- c.. Repeat steps a and b.
- d. Do venipuncture. Use 3 ml or larger vacuum tube containing EDTA anticoagulant.
- e. Mix the blood immediately after collection with the anticoagulant by gently rocking the specimen end to end several times
- f. Label tube with patient's name running up the tube. **Do not wrap around or and flag the label by pressing ends together to form an extension or flag..**
- h. Complete request form (DHEC 1311)

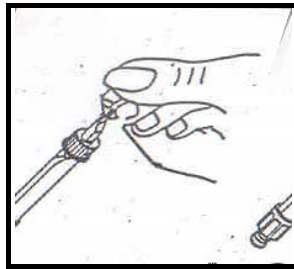
2. FINGERSTICK

NOTE: Puncturing the fingers of infants less than 1 year of age is not recommended. Puncturing the heel is more suitable for these children (NCCLS, 1986).

- a. Cleanse child's 3rd or 4th finger with an alcohol wipe.
- b.. Blot dry with gauze.
- c. Repeat steps a and b.
- d. Puncture finger with sterile lancet. See illustrations that follow.



- e. Allow the first drip of blood to fall onto gauze.
- f. Touch the lip of collection tube into the blood and fill 3/4 full. Gently massage finger to keep blood flowing. Tilt the tube slightly outward from finger, gradually lowering the tube as it fills.



- g. After sample has been collected, instruct mother to hold gauze on the child's finger until bleeding stops.
- h. IMPORTANT: Immediately after collection, mix blood thoroughly with the anticoagulant in the tube by gently rocking the tube end to end 8 times.
- i. Label tube with patient's name and date of collection. **Wrap label around tube and press loose ends together to form a flag extending from the tube.**
- j. Complete laboratory request form. (DHEC 1311)

3. HEEL-STICK

- a. Cleanse infant's heel with an alcohol wipe.
- b. Blot dry with gauze.
- c. Repeat steps a. and b.
- d. Using lancet, perform puncture as illustrated below. Stay within the shaded areas.



- e. Allow first drop of blood to fall onto gauze.
- f. Touch the lip of collection tube into the blood and fill 3/4 full. Gently massage the heel to keep blood flowing. Tilt tube slightly outward from heel. Gradually lower the tube as it fills. Apply gentle pressure with thumb and ease intermittently to maintain blood flow.



- g.. After sample has been collected, instruct the mother to hold gauze on the child's heel until bleeding stops.
- h. **IMPORTANT:** Immediately after collection, mix blood thoroughly with the anticoagulant in the tube by gently rocking the tube end to end 8 times.
- I. Label tube with patient's name and date of collection. **Wrap label around tube and press loose ends together to form a flag extending from the tube.**
- j. Complete laboratory request form. (DHEC 1311)

Storage and Transportation

Blood specimens are more stable if refrigerated (4 degrees C) prior to shipment. It is not necessary to refrigerate the specimen during shipment. Mail specimens to the laboratory the same day they are collected if possible.

STOOL CULTURE COLLECTION FOR ENTERIC PATHOGENS

Principle:

To properly collect a stool specimen for the isolation of the following enteric pathogens: *E. coli* 0157, Salmonella, Shigella, Yersinia, Campylobacter, Vibrio, Staphylococcus, *Clostridium perfringens** and *Bacillus cereus*.

Patient Preparation:

No special preparation.

Supplies:

1. Wide-mouthed container.
2. Enteric Bacteriology kit: Cary-Blair transport media. Obtain from Bureau of Laboratories. Store at room temperature.
3. Tongue depressors.
4. Culturette swab kit if collecting rectal specimen.
5. DHEC 1345 Bacteriology Laboratory form (orange).

Collection Precautions:

WEAR GLOVES WHEN COLLECTING STOOL SPECIMENS.

Collection Procedure (Stool):

1. Collect stool in a clean (not necessarily sterile) wide-mouthed container that can be covered with a tight-fitting lid. These containers must be free of preservatives and detergents.
2. DO NOT COLLECT SPECIMEN FROM TOILET. AVOID CONTAMINATION WITH URINE.
3. Infant specimens may be collected in a disposable diaper with plastic side facing inside.
4. Volume collected: Solid walnut sized piece liquid 5-10 ml.

Directions for Cary-Blair:

Cary-Blair enteric kit is used when the following microorganisms are suspected: *E. coli* 0157, Salmonella, Shigella, Yersinia, Staphylococcus, *Bacillus cereus*, *Campylobacter*, or *Vibrio*.

1. Use a tongue depressor or the spoon inside the lid to transfer solid, walnut size portion of stool.
Or using a pipette, transfer 5 - 10 ml of liquid stool to the transport media. Replace cap on tube and store at room temperature until transported.

Stool Culture Collection for Enteric Pathogens- page 2 of 3

Directions for unpreserved specimens:

Use only for *C. Perfringens* **quantitation** *.

1. Submit a minimum of a walnut sized portion of feces in a sterile leak-proof container.
Specimen must be shipped on a cold pack and must arrive at the laboratory in less than 24 hours from the time of collection.

Collection Procedure: (Rectal Swab)

1. Have the patient bear down slightly for ease in insertion of swab.
2. Carefully insert swab approximately 1 inch beyond the anal sphincter.
3. Gently rotate the swab to sample crypts . Allow the swab to remain in the anal area for several seconds for better absorption of organisms onto the swab. Swabs without visible fecal material will not be tested.
4. Withdraw the swab, place in culturette or Cary-Blair medium, crush the ampule in the bottom of the culturette and store at room temperature.
5. Culturette swabs may be used for *Salmonella*, *Shigella*, *Bacillus cereus*, *Yersinia*, *Staphylococci* or *E. coli* 0157. If *Vibrio* or *Campylobacter* is suspected, pour out 2/3 of liquid in the enteric kit. Submit swab in the remaining liquid.

Specimen Handling:

- A. Specimen Labeling
 1. Place a patient identification label on the transport medium or culturette swab kit.
- B. Requisition
 1. Complete a DHEC 1345 Bacteriology (orange) laboratory form to accompany specimen.
[See instructions for completing](#), pg II-3
Be sure to complete additional test specific information
Specimen Site: Mark AX@by 010 Feces box.
Date Collected
Organism Suspected: Indicate name of suspected.
Test Required: Mark 508 - feces for enteric culture.

NOTE: Routine culture includes testing for *Salmonella*, *Shigella*, and *E. coli* 0157. Testing for *Campylobacter* is routinely included for specimens submitted in Cary-Blair transport medium. Request for culture of other specific pathogens must be indicated on the laboratory request form.

Stool Culture collection for Enteric Pathogens- page 3 of 3

Specimen Preservation and Transport:

1. Ship specimens in transport media at room temperature using a suitable shipping container. **DO NOT REFRIGERATE TRANSPORT MEDIA ONCE INOCULATED WITH SPECIMEN** if specimen will arrive within 48 hours after collection.
2. Ship unpreserved feces for *C. Perfringens* **quantitative** in a sterile leak-proof container on a **cold pack**. Specimens not in holding medium must be shipped immediately in order to be inoculated within 24 hours of collection.
3. Ship culturette swab kit at room temperature.

Specimen Rejection:

1. Specimen quantity insufficient.
2. Specimen too old.
3. Use of improper transport media or transport conditions.
4. Specimen not labeled.
5. No requisition form accompanying specimen and insufficient information on specimen to identify sender or test needed.
6. Name on specimen differs from name on requisition.

References:

1. Miller, J. M., 1999, A Guide to Specimen Management in Clinical Microbiology, Second Edition, ASM Press, Washington, D.C.

THROAT CULTURE COLLECTION PROCEDURE FOR BACTERIAL PATHOGENS AND VIRUSES

Principle:

To properly collect a throat culture for the isolation of Beta Strep Group A, Diphtheria and viruses (Enterovirus and Respiratory viruses, Mumps, Measles).

Patient Preparation:

No special preparation.

Supplies:

1. Culturette swab kit for bacterial culture
2. Sterile cotton or Dacron swab for viral culture
3. Viral transport media (store in refrigerator)
4. DHEC 1345 laboratory form for bacteria
5. DHEC 1337 laboratory form for viruses

Collection Procedure for Throat Swab:

1. Shine a bright light if possible over the shoulder of the specimen collector into the oral cavity of the patient so that the swab can be guided to the posterior pharynx.
2. The patient is instructed to tilt his/her head back and breathe deeply.
3. Depress the tongue with a tongue depressor to help visualize the posterior pharynx.

Use culturette kit for bacteria or use a sterile cotton or Dacron swab for viral culture.

Do not use calcium alginate swabs.

4. Extend the swab to the back of the throat between the tonsillar pillars and behind the uvula.
5. Have the patient phonate a long Aah@which will lift the uvula and help to prevent gagging.
6. The tonsillar areas and posterior pharynx should be firmly rubbed with the swab.
7. Care should be taken not to touch the teeth, cheeks, gums or tongue when inserting or removing the swab to minimize contamination with normal mouth flora.
8. After the collection, place the swab back into the culturette and break the ampule if culturing for bacteria.

*** Note: Notify the DHEC Bacteriology Section (803-896-0805) when a diphtheria specimen is to be collected so that special isolation media can be prepared.**

9. If culturing for viruses, place the swab immediately into viral transport media.
 - for Enterovirus, Mumps and Parainfluenza use viral transport media.
 - for Influenza use influenza transport media.

Collection Procedure for Throat Washing (virus culture)

1. Remove viral transport media from refrigerator and warm to room temperature.
2. Have patient use as a gargle to collect a throat washing except when using influenza transport media.
3. Return fluid to vial for transport. Place cap on securely to prevent leakage.

Throat Culture Collection Procedure - Page 2 of 3

Specimen Labeling:

For Bacterial Culture

A. Specimen Labeling

Place a patient label on a culturette swab kit.

B. Requisition

Complete a DHEC 1345 laboratory requisition (orange) to accompany specimen.

[See instruction for completing](#), pg II-3. Be sure to complete test specific information:

Specimen Site: Mark AX@in the appropriate box. If AOther@is marked, enter the site.

Organism Suspected: Indicate name of suspected organism.

Test Required: Mark AX@in the appropriate box. Complete remainder of form for referred isolates only.

For Viral Culture:

A. Specimen Labeling

1. Place a patient label on vial of viral transport media..

B. Requisition

1. Fill out a DHEC 1337 laboratory requisition (red) to accompany specimen [See instructions for completing](#), pg II-3. Be sure to complete test specific information:

Specimen: Mark AX@in the appropriate box. If AOther@is marked, enter specimen site.

Date of Onset: Enter month, day and year.

Symptoms: Circle each symptom that applies. If AOther@is circled, write in symptom(s).

When ordering a test for herpes: Mark the appropriate box to specify if the patient is pregnant and/or if disease is active.

Test Requested: Mark AX@in the appropriate box.

Virus Suspected: Enter name of virus suspected.

Specimen Preservation and Transport

For Bacterial Culture:

1. Store culturette at room temperature until it can be transported to the laboratory.

For Viral Culture:

1. Refrigerate viral transport tubes until transportation to the laboratory.
2. Ship cold within 24 - 48 hours after collection.

Specimen Rejection

For Bacterial Culture:

1. Ampule in culturette not crushed.
2. Specimen not labeled with patient's name.
3. No laboratory requisition accompanying specimen.

Throat Culture Collection Procedure- Page 3 of 3

For Virus Culture:

1. Use of calcium alginate swabs.
2. Specimen not labeled.
3. No laboratory requisition accompanying specimen.

References:

1. Koneman, E.W., Allen, S.D., Janda, W.M., Schreckenberger, P.C., Winn, W.C., 1992. Color Atlas and Textbook of Diagnostic Microbiology 4th ed. J.B. Lippincott Co.
2. NCCLS Physician Office Laboratory Guidelines. 1992. 2nd ed. NCCLS Document POL1-T2 Vol. 12 No.5.

THIS PAGE LEFT BLANK INTENTIONALLY

THIS PAGE LEFT BLANK INTENTIONALLY

THIS PAGE LEFT BLANK INTENTIONALLY

THIS PAGE LEFT BLANK INTENTIONALLY

VAGINAL CULTURE COLLECTION FOR DETECTION OF BETA-HEMOLYTIC STREPTOCOCCUS GROUP B

Principle:

To properly collect a vaginal culture for the detection of beta-hemolytic Group B Streptococcus or *Streptococcus agalactiae*.

Patient Preparation:

No special preparation.

Supplies:

1. Culturette swab kit
2. DHEC 1345 laboratory form for bacteriology (light orange)
3. Speculum

Collection Procedure: (Vaginal)

1. Insert the speculum.
2. With the culturette swab obtain the specimen from the posterior vaginal vault.
3. Allow a few seconds for absorption of material.
4. Place the swab back into the culturette and break the ampule.

Specimen Handling:

- A. Specimen labeling
 1. Place a patient label on the culturette swab kit.
- B. Requisition
 1. Complete a DHEC 1345 laboratory requisition (light orange) to accompany specimen.
[See instructions for completing](#), Pg II-3. Be sure to include additional test specific information for the following:
 - Specimen Site
 - Organism Suspected:
 - Test Required: Mark AX@in 510 box (miscellaneous clinical specimen for culture)
 - Date collected

Specimen Preservation and Transport:

1. Store culturette at room temperature until it can be transported to the laboratory.
2. Ship at room temperature.

Specimen Rejection:

1. Ampule in culturette not crushed.
2. Specimen not labeled with patient's name.
3. No laboratory requisition accompanying specimen, and insufficient information on specimen to determine sender or test needed.
4. Name on requisition different from name on specimen.

CULTURE COLLECTION FOR DETECTION OF *BORDETELLA PERTUSSIS*

Principle:

To properly collect a nasopharyngeal culture for the isolation of *Bordetella pertussis*.

Patient Preparation:

No special preparation.

Supplies:

1. Sterile calcium alginate swab on a flexible wire
2. Regan-Lowe transport medium for *Bordetella pertussis*
3. DHEC 1345 (light orange) bacteriology laboratory form
4. Microscope slides

Collection Procedure: (Nasopharyngeal)

1. With the thumb of one hand, gently elevate the tip of the patient's nose.
2. Moisten the tip of the swab being used with sterile water or saline and gently insert it into the patient's nares.
3. Guide the swab backward and upward along the nasal septum until a distinct resistance is met.
4. Rotate the swab and gently remove it.
5. After collection submerge inoculated swab into the bottom of a Regan-Lowe tube.
NOTE: *Bordetella pertussis* will die rapidly on a swab. Inoculated swabs must be put into transport medium immediately after collection.
6. Break off the portion of the swab shank extending from the tube.
7. Screw cap tightly.
8. If submitting slides for fluorescent antibody (FA) testing, use a separate swab to prepare smears of nasopharyngeal material .

Specimen Handling :

- A. Specimen Labeling
 1. Label a tube of Regan-Lowe transport medium with a patient label.
 2. Label glass slides with the patient's name if submitting slides for fluorescent antibody (FA) testing. Place patient name on same side of slide as the NP smear.
- B. Requisition
 1. Fill out a DHEC 1345 (light orange) laboratory form to accompany specimen. [See instructions for completing](#), Pg II-3. Be sure to complete additional test specific information.
 - Specimen Site: Mark AX@in 052 Nasopharyngeal (NP) box
 - Date Collected:
 - Organism Suspected:
 - Test Required: Mark AX@in 510 box for culture or 513 box if submitting slide for fluorescent antibody (FA)

Culture for *Bordetella pertussis*- Page 2 of 2

Specimen Preservation and Transport:

1. Place the Regan-Lowe tube into a double walled mailing container and hold at room temperature.
2. Transport to the laboratory by courier or fastest means possible.
3. If shipping is delayed the transport tube may be incubated at 35°C for 24-48 hours.
4. Submit labeled unfixed glass slides for FA testing in cardboard slide holders if this test is requested.

Specimen Rejection:

1. Improper transport medium.
2. Specimen too old.
3. Regan-Lowe medium expired.
4. No laboratory requisition accompanying specimen.
5. Specimen not labeled.
6. Name on specimen is different from name on requisition

References:

1. Koneman, E.W., Allen, S.D., Janda, W.M., Schreckenberger, P.C., Winn, W.C. 1992. Color Atlas and Textbook of Diagnostic Microbiology, 4th ed. J.B. Lippincott Co.

CULTURE COLLECTION FOR DETECTION OF *NEISSERIA GONORRHOEAE*

Principle:

To properly collect an eye culture, rectal culture and oropharyngeal culture for the diagnosis of *Neisseria gonorrhoeae*. To properly collect a cervical, urethral and vaginal culture in cases of assault or sexual abuse.

Patient Preparation:

For urethral culture: Males

1. The patient should not have voided for at least 1 hour before performing a culture, especially men without a discharge.

Supplies:

1. Sterile cotton-tipped swab
2. Sterile calcium alginate swabs (males)
3. Transgrow bottles or culture plates at room temperature for *Neisseria gonorrhoeae*
4. DHEC laboratory form 1325B for *Neisseria gonorrhoeae*
5. Speculum (cervical, vaginal)
6. Large cotton-tipped swabs (cervical)

Collection Precautions: (All specimens)

WEAR DISPOSABLE GLOVES AND PROTECTIVE EYE WEAR WHEN COLLECTING AND HANDLING SPECIMENS.

Collection Procedure: (Eye)

- A. Specimen Collection
 1. Touch a sterile cotton-tipped swab to purulent discharge.
 2. If necessary lower eyelid may be pulled down and the swab touched to the conjunctival mucosa.
 3. Inoculate Transgrow bottles for *Neisseria gonorrhoeae* as described in the inoculation of culture media section.

Collection Procedure: (Rectal)

- A. Specimen Collection
 1. Have the patient bear down slightly for ease in insertion of swab.
 2. Insert a sterile cotton tipped swab approximately 3 cm into the anal canal using lateral pressure to avoid entering any fecal mass. If gross fecal contamination of the swab occurs, it should be discarded into a biohazard container and a repeat specimen obtained.
 3. Rotate the swab to sample crypts just inside the anal ring and allow the swab to remain in the anal area for several seconds for better absorption of organisms onto the swab.
 4. Inoculate Transgrow bottles for *N. gonorrhoeae* as described under Specimen Handling,

Culture Collection for Detection of *Neisseria gonorrhoeae* - Page 2 of 4

Collection Procedure: (Oropharyngeal [Throat])

A. Specimen Collection

1. Using a tongue blade to hold the tongue down, take a specimen directly from the back of the throat, carefully avoiding contact with teeth, cheeks, gums or tongue when inserting or removing the swab.
2. Rub a sterile cotton tipped swab over the back wall of the throat and tonsillar crypts.
3. Inoculate Transgrow bottles for *N. gonorrhea* as described under Specimen Handling, subsection C.

Collection Procedure: (Cervical)

A. Specimen Collection

1. Obtain the cervical specimen with the aid of a speculum that has been moistened with water. Other lubricants may contain antibacterial agents.
2. Insert the speculum and if unable to visualize the cervical os, remove excess mucus with a large cotton-tipped swab.
3. Insert sterile cotton-tipped swab into the endocervical canal approximately 2-3 cm. Move the swab in a rotary motion for a few seconds to permit absorption of the exudate. If the patient is pregnant, and there has been no vaginal bleeding, insert swab into the endocervix only until the cotton tip is no longer visible and rotate gently for a few seconds).
4. Inoculate Transgrow bottles or culture plates for *N. gonorrhoeae* as described in the inoculation of culture media section.

Collection Procedure: (Vaginal) for Children and Hysterectomy Patients Only

A. Specimen Collection

1. Insert the speculum.
2. With a sterile cotton-tipped swab obtain the specimen from the posterior vaginal vault.
3. Allow a few seconds for absorption of material.
4. If the hymen is intact, a swab of the vaginal orifice will suffice.
5. Inoculate Transgrow bottles for *N. gonorrhoeae* as described under Specimen Handling, subsection C.

Collection Procedure: (Urethral Culture - Females)

A. Specimen Collection

1. Massage the urethra against the pubic symphysis from vagina to orifice to express discharge.
2. If no discharge is evident, insert a sterile calcium alginate swab approximately 2 cm into the urethra and rotate for several seconds.
3. Withdraw swab and inoculate Transgrow bottles as described under Specimen Handling, subsection C

Collection Procedure: (Urethral - Males)

A. Specimen Collection

1. Insert a sterile calcium-alginate swab with a wire shaft 2-4 cm into the urethra.
2. Once inserted, rotate the swab gently to ensure contact with all the urethral surface.
3. Leave inserted for 2-3 seconds for better absorption of material.
4. Withdraw the swab and inoculate Transgrow medium.

Specimen Handling and Labeling:

A. Specimen Labeling

1. Place label with patient's name on back of Transgrow bottle where chocolate colored media is layered. **Do not place label on top clear side of bottle.** The clear glass window is needed to observe for any growth.

B. Requisition

1. Complete a DHEC 1325B laboratory requisition (orange) to accompany specimen. [See instructions for completing](#), Pg II-3. Be sure to complete test specific information.
 - Specimen: Mark ☐ in the appropriate box. If ☐ is checked, write in the site.
 - Was Culture Incubated Before Transport?: GC cultures, mark ☐ in the appropriate box.
 - Reason for Test: Mark ☐ in the appropriate box. If ☐ is checked, write in reason for test.
 - Test Requested: Mark ☐ in the appropriate box.
 - Date Collected
 - Date of Birth

C. Inoculation of Transgrow Medium

1. Have the Transgrow medium at room temperature and check the expiration date before inoculation.
2. **Hold the bottle in an upright position. Remove the cap from the bottle only when ready to inoculate.**
3. Soak up excess moisture in the bottle with the specimen swab and roll the swab from side to side over the entire surface of the medium starting at the bottom of the bottle.
4. Remove swab from bottle and discard into a biohazard container.
5. Recap the bottle tightly.

Specimen Preservation and Transport:

1. Place the Transgrow bottle in an upright position in an incubator set at 35°C as soon as possible after inoculation. The sooner the culture is placed in an incubator, the better chance of recovery of *Neisseria gonorrhoeae*.
2. **Never refrigerate the Transgrow medium after inoculation as cold temperature will rapidly kill gonococci.**
3. If an incubator is not available, make sure culture is shipped on the same day as collected. If an incubator is available, incubate until ready to ship.

Culture Collection for Detection of *Neisseria gonorrhoeae* - Page 4 of 4

4. If the specimen is collected on Friday and cannot be shipped until Monday, incubate over the weekend, but remove first thing Monday morning to prevent overgrowth of contaminants.

Specimen Rejection:

1. Transgrow bottle broken in transit.
2. Media expired.
3. No name on culture.
4. No laboratory requisition accompanying specimen , and insufficient information on specimen to identify sender or test needed.
5. Name on specimen differs from name on requisition.
6. Specimen is in transit for more than 5 days.

References:

1. NCCLS Physician's Office Laboratory Guidelines Vol. 12 No. 5.
2. Miller, M. J., A Guide to Specimen Management in Clinical Microbiology, ASM Press, Washington, D.C., 1996.

CULTURE COLLECTION FOR DETECTION OF *CHLAMYDIA TRACHOMATIS*

Note: CULTURE IS NOT AVAILABLE FOR THE SCREENING AND ROUTINE DIAGNOSIS OF FEMALE ENDOCERVICAL AND MALE URETHRAL INFECTIONS.

CONJUNCTIVAL SWABS MUST BE SUBMITTED FOR CULTURE.

RECTAL OR NASOPHARYNGEAL SPECIMENS SHOULD BE SUBMITTED FOR CULTURE. GEN-PROBE IS NOT APPROPRIATE IN CASES OF ASSAULT OR SEXUAL ABUSE. PATIENTS TWELVE YEARS OLD AND YOUNGER SHOULD BE TESTED BY CULTURE.

Principle:

To properly collect an eye or rectal specimen, and in cases of chlamydial pneumonia, a nasopharyngeal specimen, for the isolation of Chlamydia.

Patient Preparation:

For urethral culture: Males

The patient should not have urinated for at least one (1) hour prior to culture collection.

Supplies:

1. Sterile cotton-tipped swabs with plastic shafts.
2. Sterile cotton-tipped swabs with wire shafts.
3. Chlamydia transport (2SP) media for chlamydia culture (store media in refrigerator until needed).
4. DHEC 1325B laboratory form for Chlamydia and *Neisseria gonorrhoeae*.
5. Biohazard bags.
6. Speculum for cervical, vaginal culture.
7. Large cotton-tipped swabs for cervical culture.

DO NOT USE SWABS WITH WOODEN SHAFTS AS THESE ARE TOXIC TO CHLAMYDIA.

Collection Precautions:

WEAR DISPOSABLE GLOVES AND PROTECTIVE EYEWEAR WHEN COLLECTING AND HANDLING SPECIMENS.

Culture Collection for Detection of *Chlamydia trachomatis* - Page 2 of 4

Collection Procedure: (Eye)

A. Specimen Collection and Inoculation

1. Use a sterile cotton-tipped swab to remove pus or discharge from the eye. Discard this swab into a biohazard container.
2. Moisten a sterile cotton-tipped swab with chlamydia transport medium and vigorously swab the afflicted conjunctiva. Place the swab into a tube of Chlamydia transport medium. Care should be taken so that swabbing is sufficient to recover epithelial cells.
3. Rotate the swab to elute the specimen into the medium. The swab may be left in the medium. Recap the tube.
4. Refrigerate the sample until it can be transported to the Bureau of Laboratories. Specimens should be sent without delay.

Collection Procedure: (Nasopharyngeal)

Chlamydia may be isolated from cases of Chlamydial pneumonia by one of several methods. A nasopharyngeal swab can be expected to produce a significant number of positive cultures from cases of chlamydial pneumonitis.

A. Specimen Collection

1. With the thumb of one hand, gently elevate the tip of the patient's nose.
2. Moisten the tip of a cotton-tipped swab with a wire shaft with Chlamydial transport medium or saline and gently insert it into the patient's nares.
3. Guide the swab backward and upward along the nasal septum until a distinct give of resistance is met.
4. Rotate the swab and gently remove it.
5. Place the swab in Chlamydia transport medium and rotate the swab into the medium.
6. Leave the swab in the medium and recap.
7. Refrigerate the medium until it can be transported to the Bureau of Laboratories.

Collection Procedure: (Rectal)

A. Specimen Collection

1. Have the patient bear down slightly for ease in insertion of swab.
2. Moisten the tip of a sterile cotton-tipped swab with Chlamydial transport medium and insert the swab approximately 3 cm into the anal canal using lateral pressure to avoid entering any fecal mass. If gross fecal contamination of the swab occurs, it should be discarded into a biohazard container and a repeat specimen obtained.
3. Rotate the swab to sample crypts just inside the anal ring and allow the swab to remain in the anal area for several seconds for better absorption of organisms onto the swab.
4. Withdraw the swab and place it into Chlamydial transport medium. Rotate the swab in the medium.

Culture Collection for Detection of *Chlamydia trachomatis* - Page 3 of 4

5. Leave the swab in the medium and recap.
6. Refrigerate sample until it can be transported to the Bureau of Laboratories.

Collection Procedure: (Male Urethral)

- A. Specimen Collection
 1. Patient should not have urinated for at least 1 hour prior to sample collection.
 2. Insert swab for collection kit 2-4 cm into urethra.
 3. Once inserted, rotate swab gently at least one full rotation using sufficient pressure to ensure swab comes into contact with all urethral surfaces. Allow swab to remain inserted for 2 to 3 seconds.
 4. Withdraw swab.
 5. Place the swab in the Chlamydial transport medium and rotate the swab in the medium to elute the specimen. Leave the swab in the medium and recap.
 6. Refrigerate the sample until it can be transported to the Bureau of Laboratories within 48 hours.

Collection Procedure: (Cervical)

- A. Specimen Collection
 1. Obtain the cervical specimen with the aid of a speculum that has been moistened with water. Other lubricants may contain antibacterial agents.
 2. Insert the speculum and if unable to visualize the cervical os, remove excess mucus with a large cotton-tipped swab.
 3. Moisten a sterile cotton-tipped swab with chlamydial transport medium or saline and insert the swab into the endocervical canal approximately 2-3 cm. Move the swab in a rotary motion with sufficient pressure to collect cells for 10-30 seconds. Since *Chlamydia* are intracellular pathogens, it is important to obtain cervical cells. (Note: If the patient is pregnant, question her about vaginal bleeding or leakage of fluid from the vagina. If bleeding or leakage has occurred, DO NOT do a culture and refer patient to MD. If no bleeding or leakage has occurred, insert swab into the endocervix only until the cotton tip is no longer visible and rotate gently 10-30 seconds).
 4. Remove the swab without touching the vaginal mucosa.
 5. Place the swab in the Chlamydial transport medium and rotate the swab in the medium to elute the specimen. Leave the swab in the medium and recap.
 6. Refrigerate the sample until it can be transported to the Bureau of Laboratories within 48 hours.

Culture Collection for Detection of Chlamydia trachomatis- Page 4 of 4

Collection Procedure: (Vaginal) for Children and Hysterectomy Patients

A. Specimen Collection

1. Insert speculum after moistening with water.
2. Moisten a sterile cotton-tipped swab with Chlamydial transport medium or saline.
3. Insert swab and obtain the specimen by rotating the swab in the posterior vaginal vault. Allow a few seconds for absorption of material.
4. Since Chlamydia are intracellular pathogens it is important to obtain both exudate and cells.
5. Remove the swab and place it in chlamydial transport medium.
6. Rotate the swab in the transport medium to elute the specimen.
7. Leave the swab in the medium and recap.
8. Refrigerate the sample until it can be transported to the Bureau of Laboratories within 48 hours.

Specimen Preservation and Transport:

1. Refrigerate the specimen until it can be transported.
2. Ship the sample on wet ice in a biohazard bag within 24-48 hours after collection.
3. Freeze at -70 C if held longer than 48 hours. **Do not freeze at -20C.**

Specimen Rejection:

1. Improper transport medium.
2. Specimen too old (> 48 hours).
3. No laboratory requisition accompanying specimen.
4. Specimen not labeled.
5. Specimen leaked during transport.
6. Specimen (rectal) may be toxic to the cell line used for culture of Chlamydia.

References:

1. Koneman, E.W., Allen, S.D., Janda, W.M., Schreckenberger, P.C., Winn, W.C. 1992. Color Atlas and Textbook of Diagnostic Microbiology, 4th ed. J.B. Lippincott Co.

FUNGAL CULTURE COLLECTION HAIR, SKIN AND NAILS

Principle:

To properly collect hair, skin scrapings and nails for the isolation and diagnosis of dermatophytes or ringworm.

Patient Preparation:

No special preparation.

Supplies:

1. Sterile screw capped container or sterile petri dish
2. Forceps
3. Scalpel blade or glass slide
4. Nail clippers
5. 70% alcohol pads
6. DHEC 1333 laboratory form for mycology

Collection Procedure: (Hair, nails and skin)

Hair:

1. With forceps, collect 8-10 short, broken hairs and roots.
2. Hairs should be collected from areas of scaling or balding.
3. Place hairs in sterile container.

Nails:

1. Wipe nail with 70% alcohol.
2. The nail surface should be scraped off with a scalpel. Collect deeper nail scrapings along with scrapings from under the leading edge of the nail.
3. Place material in sterile container or an envelope.

Skin Scrapings:

1. Clean lesion with 70% alcohol to remove surface bacterial contaminants.
2. Scrape the periphery or growing margin of the lesion with a scalpel blade or the side of a clean glass slide.
3. Place scrapings into a sterile container.

Specimen Labeling:

- A. Specimen Labeling:
Place a patient label on the sterile container.

Fungal Culture Collection Hair, Skin and Nails - Page 2 of 2

B. Requisition

1. Fill out a DHEC 1333 laboratory requisition (lavender) to accompany specimen. [See instructions for completing, Pg. II-3](#). Be sure to complete additional test specific information
 - Agent Suspected: Indicate organism or type organism suspected.
 - Patient: Mark AX@in the 301 box.
 - Source of Specimen: Mark AX@in appropriate box (skin, hair, nails).

Specimen Preservation and Transport:

1. Store samples at room temperature.
2. Ship samples at room temperature.

References:

1. Koneman, E.W., Allen, S.D., Janda, W.M., Schreckenberger, P.C., Winn, W.C. 1992. Color Atlas and Textbook of Diagnostic Microbiology, 4th ed. J.B. Lippincott Co.
2. Murray, P.R., Baron, E.J., Pfaller, M.A., Tenover, F.C., Tenover, R.H. 1995. Manual of Clinical Microbiology, 6th ed. ASM Press, Washington, D.C.
3. Kwon-Chung, K.J., Bennett, J.E. 1992. Medical Mycology, Lea and Febiger, Philadelphia.

FUNGAL CULTURE COLLECTION SPUTUM

Principle:

To properly collect a sputum specimen for the diagnosing of a fungal infection.

Supplies:

1. Sterile screw cap container for fungal culture.
- 2.. DHEC 1333 laboratory form for fungi (lavender).

Patient Preparation:

1. Prior to breakfast, the patient should brush his/her teeth and/or rinse with water, or mouthwash before obtaining the sputum specimen. A clean mouth reduces the overgrowth of mouth flora.

Collection:

1. Remove the cap from the sterile container without touching the inside of the container. This will avoid contamination of the specimen which results in having to submit another specimen.
2. Patient is instructed to take a deep breath, hold it momentarily and cough deeply from the deepest part of the chest. .
3. Sputum from the lungs is collected into the appropriate sterile container until at least 5 ml or 1 teaspoon is obtained. Replace the lid on the container. A minimum of 5 ml is needed for culture. **Saliva and nasal secretions are not satisfactory.**
4. Avoid soiling the outside of the container. If soiling with sputum occurs, wipe with a cloth wet with alcohol, soap and water, or 1:10 bleach solution, then wash hands.
5. Sputum specimens should be free of food particles and other extraneous material.
6. Replace the cap on plastic tube or sterile container.

Specimen Handling:

A. Specimen Labeling

1. Label a sterile screw cap container with the patient's label.

B. Requisition

1. Fill out a DHEC 1333 laboratory form (lavender) to accompany specimen. [See instructions for completing, Pg II-3.](#) Be sure to complete specific test information.
 - Agent Suspected: Enter the suspected agent.
 - Specimen Source: Mark AX@in the appropriate box. If AOther@is marked, enter site.

Specimen Preservation and Transport:

1. Place the plastic sputum collection tube in the metal can and close screw cap securely. Place the metal can in outer cardboard mailing container.
2. Maintain specimen at room temperature until it can be transported to the laboratory.
3. Ship specimen within 24 hours after collection.

Fungal Culture Collection, Sputum - Page 2 of 2

Specimen Rejection:

1. Sputum specimen > 24 hours old.
2. Sputum specimen contaminated with saliva.

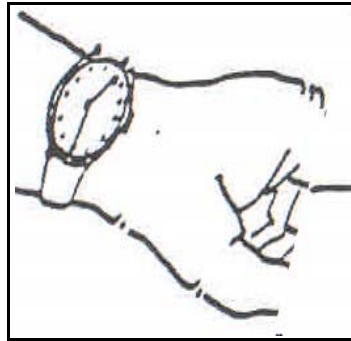
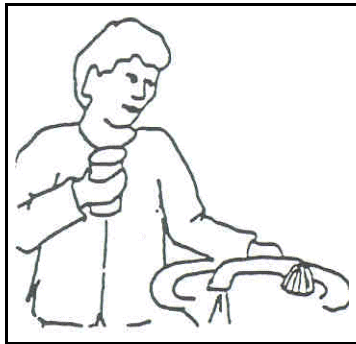
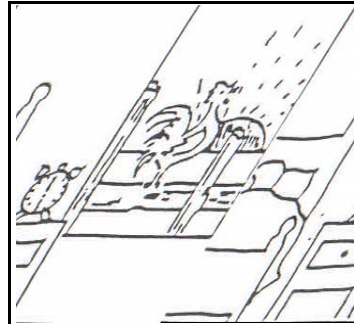
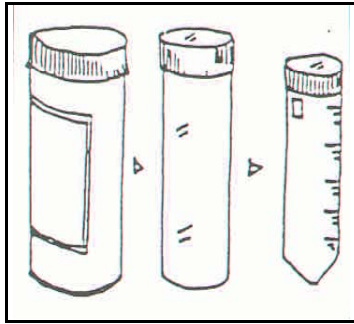
References

1. Koneman, E.W., Allen, S.D., Janda, W.M., Schreckenberger, P.C., Winn, W.C., 1992. Color Atlas and Textbook of Diagnostic Microbiology, 4th ed. J.B. Lippincott Co.
2. McGinnis, M.R., 1980. Laboratory Handbook of Medical Mycology, Academic Press, New York.
3. Beneke, E.S., Rogers, A.L., 1996. Medical Mycology and Human Mycoses, Star Publishing Company, Belmont, California.

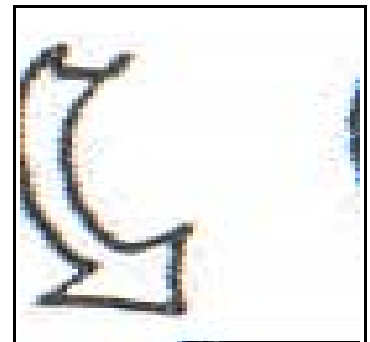
CULTURE COLLECTION FOR DETECTION OF MYCOBACTERIA (TB)

TYPE SPECIMEN	COLLECTION TIME	AMOUNT	NUMBER OF SPECIMENS	TYPE CONTAINER	SPECIAL PROCEDURE
Sputum	Early AM Upon Waking	5-10 ml.	Series of 3 One/Day	DHEC outfits for collection	Sputum-material coughed up from deep in lungs-not saliva
Urine	Early AM	Entire specimen, centrifuge 10 ml.	Series of 3 One/Day	Same	Voided midstream specimen collected as aseptically as possible. Transport to lab immediately.
Gastric Washing	Early AM	10 ml.	1 or more as needed	Same	No food after midnight. Pass 20-50 ml. sterile distilled water through stomach tube and draw off specimen in sterile tube.
Biopsy				Same	No fixative or preservatives (saline only)
Feces		Formed- send walnut sized portion Liquid-send 10 ml.	1 or more as needed	Same	
Sterile body fluids other than blood (spinal, joint, pleural, etc.)		5-10 ml.	1 or more as needed	Same	
Swabs of drainage or other material				Same	Use small amt of sterile saline to keep swab moist. Do not use transport media . Swabs are not usually productive specimens for mycobacteria.

Culture Collection of Sputum for Detection of Mycobacteria



1. Use laboratory approved container.
2. Collect early morning specimen.



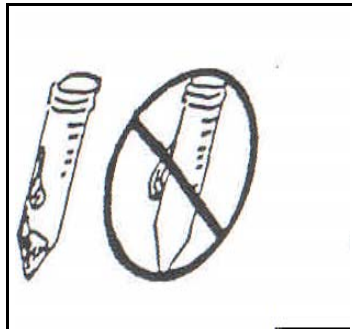
3. Rinse mouth with water .
4. Wait at lest 1 minute.
5. Sit on side of bed.

6. Cough deeply and collect any the sputum (cold, Aflem@ brought the up from your chest. Tighten the

7. Do not get sputum on the outside of the tube. Fill to the 5 ml. mark.

8. Wrap the lab slip around Metal can and put them in Cardboard can. cap securely.

Return samples to the Health Department the same day.



CULTURE COLLECTION FOR DETECTION OF MYCOBACTERIUM

Principle:

To properly collect a sputum or urine specimen for the diagnosing and monitoring of tuberculosis and other mycobacterial infections. Collection procedure for Induced sputum specimens collected in DHEC clinics can be found in nurses manual.

Supplies:

1. (A) Sterile sputum collection kit for TB (50 ml plastic sputum collection tube, metal can and cardboard mailing container) or
(B) Sterile screw cap container with a round opening of at least 2 inches for urine
2. DHEC 1306 laboratory form for TB (gold)
3. Particulate respirator (PR)

Collection Procedure: (All Specimens)

WEAR DISPOSABLE GLOVES AND A PARTICULATE RESPIRATOR WHEN COLLECTING SPECIMENS.

Patient Preparation: (Sputum)

1. Explain to patient the importance of how to collect and handle a sputum specimen. Give the patient the sputum collection kit and COLLECTION OF SPUTUM SPECIMENS FOR MYCOBACTERIA (TB) sheet.
2. If the nurse must remain with the patient while he/she is coughing and the patient is known or suspected of being infectious (smear or culture positive), the nurse should wear a particulate respirator.
3. Have the patient collect an early morning sputum sample.
4. Ask the patient to breathe deeply, exhale, then cough deeply. Steam from a hot shower or a boiling kettle may help to stimulate the flow of secretions. Also, drinking several glasses of water or other non alcoholic liquids will hydrate the dry patient and assist in raising sputum.
5. Patient should brush his/her teeth and/or rinse with water, not an antiseptic solution before obtaining the sputum specimen. A clean mouth reduces the overgrowth of mouth flora.
6. The patient should submit a series of three (3) sputum samples over a period of three days (one/day), if specimens are being collected for initial diagnosis.

Collection: (Sputum)

1. Remove the cap from the sterile container without touching the inside of the container. This will avoid contamination of the specimen which results in having to submit another specimen.
2. Patient is instructed to take a deep breath, hold it momentarily and cough deeply from the deepest part of the chest. Saliva and nasal secretions which contain few acid-fast bacteria are not to be collected.

Culture Collection for Detection of Mycobacterium- Page 2 of 4

3. Instruct the patient to spit the sputum into the appropriate sterile container until at least 5 ml or 1 teaspoon is obtained. Replace cap on the container. A minimum of 5 ml is needed for culture.
4. Avoid soiling the outside of the container. If soiling with sputum occurs, wipe with a clean cloth wet with alcohol soap and water, or 1:10 bleach solution, then wash hands.
5. Sputum specimens should be free of food particles and other extraneous material.
6. Place the cap on plastic tube or sterile container and screw to close tightly.

If patient is to collect sputum in the home, give patient sputum collection and mailing containers and instruction sheet on how to obtain a sputum sample.

Collection Procedure: (Urine)

The patient should submit a series of three (3) urine samples over a period of three days (one/day) if specimens are being collected for initial diagnosis.

Female- midstream voided:

1. Have patient thoroughly clean the urethral area with soap and water.
2. Instruct patient to sit on toilet and to manually separate labia minora with one hand and keep them separated while voiding the first portion of urine into the toilet.
3. After several ml have passed, have patient collect the midstream portion into the specimen container without stopping the flow of urine. Try to avoid touching the lip or inside of the container with the hand.
4. Have the patient finish voiding into the toilet.
5. Amount of urine needed is 10 ml. Screw cap on plastic tube to close tightly.

Male-midstream voided:

1. Clean the glans with soap and water.
2. While holding foreskin retracted, begin voiding.
3. After several ml have passed collect the midstream portion into the appropriate container without stopping flow of urine.
4. Have the patient finish voiding into the toilet.
5. Amount of urine needed is 10 ml. Screw cap on plastic tube to close tightly.

For collection procedures on other specimens see chart on Collection and Shipment of Mycobacterial Specimens.

Mycobacteriology Specimen Handling:

- A. Specimen Labeling
 1. Place a patient identification label on the 50 ml screw capped tube.

Culture Collection for Detection of Mycobacterium - Page 3 of 4

B. Requisition

1. Fill out a DHEC 1306 laboratory form to accompany specimen. [See instructions for completing, Pg II-3.](#) Be sure to complete test specific information:
 - Agent suspected: Enter the suspected agent.
 - Specimen source: Mark AX@in the appropriate box. Mark AX@as to ANew Case@ AOld Case@ AFirst Specimen@ or ARepeat@
 - Date Collected: **If repeat, date last specimen submitted:**
 - Therapy Status: Mark AX@in the appropriate box
 - Date Stopped: If APrevious@is marked, enter date therapy stopped
 - Current Drugs: Mark AX@in the appropriate box as follows:

INH - Isoniazid	KM - Kanamycin
EMB - Ethambutol	CS - Cycloserine
RF - Rifampin (Rifampicin)	PZA - Pyrazinamide
SM - Streptomycin	ETA - Ethionamide
PAS - P-Amino salicylate	
 - Test Requested: Mark AX@in the appropriate box.
 - 601 - Any type specimen except pure culture
 - 602 - Pure culture to be identified
 - Drug Susceptibility: Test 604 - Check appropriate box.

NOTE: All clinical specimens should be ordered using Test Code 601. Test Code 602 is reserved exclusively for the use of hospital or other laboratories which have isolated mycobacteria and need to have them identified. County health departments and hospitals not performing Mycobacteriology isolation activities should not use Test Code 602. Tests 601 and 602 are mutually exclusive. Do not order both. It is not necessary to request drug susceptibility testing (Test Code 604) when submitting specimens from suspected new cases of tuberculosis. The Mycobacteriology Section continues to test all initial isolates of *M. tuberculosis* for their susceptibility to INH, rifampin, ethambutol, streptomycin and pyrazinamide.

Specimen Preservation and Transport:

Preservation:

1. Refrigerate samples if shipping is delayed over 24 hours. This will decrease overgrowth of other microorganisms which delay culture results.
2. If specimen is urine, send on ice. Place a plastic bag over the fiberboard carton and place in an ice pack for transportation.

Transport:

1. Outfits for the collection and shipment of specimens consist of the sterile plastic tube which is the collection device and request form #1306 in a double mailing container with a yellow address label. These outfits may be obtained from local county health departments or directly from the

Culture Collection for Detection of Mycobacterium - Page 4 of 4

- Bureau of Laboratories and are to be used **only** for specimens for mycobacterial examination.
2. Place the collection tube in the metal can and close screw cap securely.
 3. Be sure neither plastic tube nor metal can are soiled with sputum or urine.
 4. Wrap the completed DHEC 1306 laboratory form around the metal can. Be sure the date the specimen was collected is on the form. If the laboratory form is around the plastic tube instead of the metal can the laboratory must autoclave it before it can be handled.
 5. Place the metal can in the pre-addressed, round cardboard mailing container.
 6. Mail specimen on the day it was collected, if possible, but do not mail specimen on Fridays.
 7. Refrigerate the carton until mailed.

Specimen Rejection:

1. Insufficient amount (<5 ml) of sputum; less than 10 ml urine.
2. Leakage of specimen.
3. No name on the plastic sputum collection tube.
4. No laboratory requisition accompanying specimen.

References:

1. Koneman, E.W., Allen, S.D., Janda, W.M., Schreckenberger, P.C., Winn, W.C., 1992. Color Atlas and Textbook of Diagnostic Microbiology, 4th ed. J.B. Lippincott Co.
2. NCCLS Physician's Office Laboratory Guidelines, Vol. 12 No. 5.
3. DHEC Tuberculosis Manual.

CULTURE COLLECTION FOR MYCOPLASMA/UREAPLASMA

Principle:

To properly collect a cervical specimen for the culture of Mycoplasma or Ureaplasma.

Patient Preparation:

No special preparation.

Supplies:

1. Sterile cotton-tipped swab
2. Speculum

Collection Precautions:

WEAR DISPOSABLE GLOVES AND PROTECTIVE EYEWARE WHEN COLLECTING AND HANDLING SPECIMENS.

Collection Procedure: (Cervical)

DO NOT USE SWABS WITH WOODEN SHAFTS TO COLLECT SPECIMEN.

1. Obtain the cervical specimen with the aid of a speculum that has been moistened with water. Other lubricants may contain antibacterial agents.
2. Insert sterile cotton-tipped swab into the endocervical canal approximately 2-3 cm. and swab the cervical os and the vaginal area. Insert swab into the endocervix only until the cotton tip is no longer visible and rotate gently 10-30 seconds. (Note: if the patient is pregnant, question her about vaginal bleeding or leakage of fluid from the vagina. If either has occurred, DO NOT do a culture.)
3. Place swab in Mycoplasma/Ureaplasma transport medium after collection. Tightly secure the cap of the transport tube to prevent leakage.

Specimen Handling:

- A. Specimen Labeling
 1. Label a tube of Mycoplasma/Ureaplasma transport medium with a patient label.
- B. Requisition
 1. Fill out a DHEC 1337 laboratory requisition (Red) to accompany specimen. [See instructions for completing, Pg II-3.](#) Be sure to complete specific test information.
 - Specimen: Mark AX@ in the appropriate box. If AOther@ is marked, enter specimen site.
 - Date of Onset: Enter month, day and year.
 - Symptoms: Circle each symptom that applies. If AOther@ is circled, write in symptom(s).
 - **When ordering a test for herpes: Mark the appropriate box to specify if the patient is pregnant and/or if disease is active.**
 - Test Requested: Mark AX@ in the appropriate box.
 - Virus Suspected: Enter name of virus suspected, i.e. *M. Homonis*, *M. Urea* or both.

Culture for Mycoplasma/Ureaplasma - Page 2 of 2

Specimen Preservation and Transport:

1. Refrigerate the specimen until it can be transported to the laboratory.
2. If *M. hominis* is suspected, refrigerate the specimen at 4°C if it will not reach the laboratory within six hours. For longer periods of time, freeze at -70°C.
3. If Ureaplasma is suspected, specimen can be kept in the refrigerator for 24-48 hours after collection. If shipping is delayed freeze the specimen at -70°C and ship on dry ice.

References:

1. Koneman, E.W., Allen, S.D., Janda, W.M., Schreckenberger, P.C., Winn, W.C., 1992. Color Atlas and Textbook of Diagnostic Microbiology, 4th ed. J.B. Lippincott Co.

STOOL CULTURE COLLECTION FOR ENTEROVIRUS

Principle:

To properly collect a stool specimen for the isolation of Enteroviruses including Polio, Coxsackie and Echo viruses. Specimens for virus isolation should be collected as early as possible during illness.

Patient Preparation:

No special preparation.

Supplies:

1. Wide-mouthed container.
2. Tongue depressor.
3. DHEC Laboratory form # 1337, Viral Isolation (red).

Collection Precaution:

WEAR GLOVES WHEN HANDLING ALL STOOL SPECIMENS.

Collection Procedure (Stool)

1. Collect stool in a clean (not necessarily sterile) wide-mouthed container that can be covered with a tight-fitting lid. These containers should be free of preservatives and detergents.
2. DO NOT COLLECT SPECIMEN FROM TOILET. CONTAMINATION WITH URINE SHOULD BE AVOIDED.
3. Infant specimens may be collected in a disposable diaper with plastic side facing inside.
4. Volume collected: Solid walnut sized piece liquid 5-10 ml.
5. Place in dry collection cup. Secure top with tape.

Specimen Handling:

- A. Specimen Labeling
 1. Place a patient identification label on the container.
- B. Requisition
 1. Fill out a DHEC 1337 laboratory requisition to accompany specimen. [See instructions for completing, Pg II-3](#). Be sure to complete test specific information:
 - Specimen: Mark AX@in the appropriate box. If AOther@is marked, enter specimen site.
 - Date of Onset: Enter month, day and year.
 - Symptoms: Circle each symptom that applies. If AOther@is marked, write in symptom(s).
 - When ordering a test for Herpes: Mark the appropriate box to specify if the patient is pregnant and/or if disease is active.
 - Test Requested: Mark AX@in the appropriate box.
 - Virus Suspected: Enter name of virus suspected.

Stool Culture Collection for Enterovirus- Page 2 of 2

Specimen Preservation and Transport:

1. Send cold within 24-48 hours after collection.
Freezing is required only under long transportation time in surroundings with high temperature. 2.
Transport medium is advantageous for virus isolation from swabs.

Specimen Rejection:

1. Specimen too old.
2. No identification on specimen.

CULTURE COLLECTION FOR DETECTION OF *HERPES SIMPLEX*

Principle:

The purpose of performing a herpes culture on a genital lesion or cervical/vaginal culture is to diagnose infection with the herpes simplex virus. A positive result is conclusive for diagnosis; however, a negative result does not exclude the diagnosis of herpes. Specimens taken from vesicular fluid are approximately 95% culture-positive; from pustular lesions, 70-85% culture-positive; from ulcers, 70% culture-positive; while only 25% of crusted lesions contain recoverable virus. The duration of viral shedding from ulcerative lesions is longer in first episodes than in recurrent episodes of genital lesions.

Patient Preparation:

No special preparation.

Supplies:

1. Sterile cotton-tipped swabs with plastic shafts.
Do Not Use Calcium Alginate Swabs as Herpes Simplex Virus Is Inactivated upon Storage in the Presence of Calcium Alginate.
2. Sterile saline (optional).
3. Tuberculin syringe with a 26-gauge needle.
4. Herpes viral transport medium (Order from Division of Laboratories and store in refrigerator until needed.)
5. DHEC 1337 laboratory form (red).

Collection precautions:

Wear disposable gloves and protective eyewear when collecting and handling specimens.

Collection Procedure: (Genital Lesions, Vesicles and/or Ulcers)

A. Specimen Collection

1. Clean the surface of the lesion with sterile saline if available or with tap water to remove any contaminating materials such as body fluids, excreta or drainage.
2. Specimens should be obtained from active lesions, which include ulcers and vesicular lesions. The younger the lesions, the better likelihood of obtaining a positive culture.
3. If the lesions are vesicular in nature, the fluid contained in the lesions can be withdrawn with a tuberculin syringe. The fluid can then be placed into herpes viral transport medium.
4. For vesicles that are intact, open with a sterile cotton-tipped swab.
5. Vigorously rub a sterile cotton-tipped swab over the base and margins of the lesion. Obtain vesicular fluid as well as material from the base and margins. Since herpes

Culture Collection for Detection of *Herpes simplex* - Page 2 of 3

viruses are obligate intracellular pathogens, the best way to obtain virus is to collect infected cells which would be present at the base and margins of the lesion.

6. Place the swab into Herpes transport medium. Break off the end of the swab shaft and leave the swab inside the medium.
7. Recap the medium transport tube tightly to prevent leakage during shipment and refrigerate until it is sent to the Bureau of Laboratories.

Collection Procedure: (Cervical)

A. Specimen Collection

1. Obtain the cervical/vaginal specimen with the aid of a speculum that has been moistened with water.
2. Insert the speculum and if unable to visualize the cervical os, remove excess mucus with a large cotton-tipped swab.
3. Moisten a sterile cotton-tipped swab with Herpes transport medium and insert the swab into the endocervical canal approximately 2-3 cm and swab the cervical os and the vaginal area. (NOTE: If the patient is pregnant question her about vaginal bleeding or leakage of fluid from the vagina. If bleeding or leakage has occurred, DO NOT do a culture and refer patient to MD. If no bleeding or leakage has occurred, insert swab into the endocervix only until the cotton tip is no longer visible and rotate gently 10-30 seconds).
4. Remove the swab and place it into Herpes transport medium or Chlamydia transport medium.
5. Rotate the swab in the medium to elute the specimen.
6. Break the swab shaft off and recap the medium tightly to prevent leakage during transport.
7. Refrigerate transport medium until transported to the Bureau of Laboratories.

Specimen Labeling:

A. Specimen labeling

1. Label a tube of Herpes transport medium with a patient label.

B. Requisition

1. Fill out a DHEC 1337 laboratory requisition to accompany specimen. [See instructions for completing, Pg II-3](#). Be sure to complete test specific information.
 - Specimen: Mark AX@ in the appropriate box. If AOther@ is marked, enter specimen site.
 - Date of Onset: Enter month, day and year.
 - Symptoms: Circle each symptom that applies. If AOther@ is marked, write in symptom(s).

Culture Collection for Detection of *Herpes simplex* - Page 3 of 3

- When ordering a test for Herpes: Mark the appropriate box to specify if the patient is pregnant and/or if disease is active.
- Test Requested: Mark AX@ in the appropriate box.
- Virus Suspected: Enter name of virus suspected.

Specimen Preservation and Transport:

Do not store at -15 C to -20 C.

1. Refrigerate the specimen until it can be transported. Do not place in the freezer as the herpes virus is sensitive to freezing. Cultures may be held for 72 hours in the refrigerator. If the specimen is to be held longer than 48 hours, freeze at -70 C
2. Transport the Herpes specimen cold by placing it in a small biohazard bag filled with ice or a freeze pack in a Styrofoam box within 24-48 hours after collection. If prolonged transit time is anticipated, specimen should be transported on dry ice.
3. The herpes virus is relatively unstable and is adversely affected by heat and drying. The titer of virus falls progressively if the transport media reaches room temperature.

References:

1. Koneman, E.W., Allen, S.D., Janda, W.M., Schreckenberger, P.C., Winn, W.C. 1992. Color Atlas and Textbook of Diagnostic Microbiology, 4th ed. J.B. Lippincott Co.

COLLECTION OF SPECIMENS FOR CHLAMYDIA/GC USING GEN-PROBE PROCEDURE

Two collection kits are available: One for female specimens, the other for male and conjunctival specimens.

Collection Procedure (Cervical Specimens):

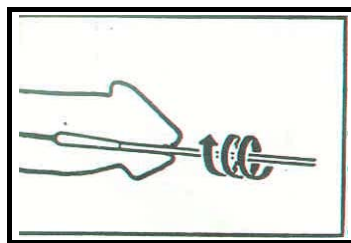
1. Remove excess mucus from cervical os and surrounding mucosa using one of the swabs provided.
Discard the cleaning swab.
2. Insert second swab from collection kit 1-12 cm into endocervical canal.
3. Rotate swab for 30 seconds in endocervical canal to ensure adequate sampling.
4. Withdraw swab carefully; avoid any contact with vaginal mucosa.
5. Prepare swab for transport (see next page).



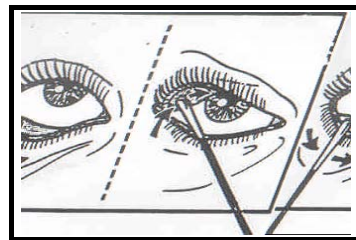
Collection Procedure (Male Urethral Specimens)

Patient should not have urinated for at least 1 hour prior to sample collection.

1. Insert swab for collection kit 2-4 cm into urethra.
2. Once inserted, rotate swab gently at least one full rotation using sufficient pressure to ensure swab comes into contact with all urethral surfaces. Allow swab to remain inserted for 2 to 3 seconds.
3. Withdraw swab.
4. Prepare swab for transport (see next page).



The current Gen-Probe assay used for detecting *Chlamydia trachomatis* is not approved for conjunctival samples.



Preparation for Transport:

1. Insert **one** swab (collection swab only) into the Gen-Probe transport tube.
Do not place 2 swabs in one tube. If sample is received with no swab in tube testing will not be performed.
2. Snap off shaft at score line or cut shaft to fit tube.
3. Cap and label tube.
Apply the label around the tube like a spiral or barber shop pole. **Do not wrap label around the tube or flag by pressing ends together.**
4. For best results, transport to the laboratory at 2°C - 25°C and test within 7 days of collection. If not tested within 7 days, vortex specimen, remove swab and store tube at -20°C - -70°C.

Note: Specimens collected with this system cannot be used for culture. Only swabs supplied with the Gen-Probe specimen collection system should be used for specimen collection. Cap tightly. Do not discard liquid.

Brown stick swabs cannot be used to collect sample. These samples will not be tested.

Left blank for future expansion.

STOOL COLLECTION FOR OVA AND PARASITES

Principle:

To properly collect a stool specimen for the detection of intestinal parasites such as Giardia, Cryptosporidia, Microsporidia, Cyclospora, or helminth eggs and larvae, i.e., Ascaris, hookworms, tapeworms.

Patient Preparation:

No special preparation.

Supplies:

1. Collection and mailing outfit for Ova and Parasites.
Note: This outfit will not allow detection of trophozoites.
2. PVA preservative for liquid stools and detection of trophozoites.
3. DHEC laboratory form # 1334, Parasitology.
4. 10% formalin (recommended for parasites such as Cyclospora).

Collection Procedure:

Refer to diagram that follows.

1. Have patient produce a bowel movement in a clean wide-mouthed container or on a clean paper. **DO NOT COLLECT SPECIMEN FROM TOILET.**
2. Infant specimens may be collected in a disposable diaper by turning the diaper inside out with the plastic side facing the skin. Specimens collected on the absorbent side are not acceptable.
3. Fill plastic tube 2/3 full with feces. Screw cap on tightly.
If using PVA or 10% formalin, place feces in preservative immediately after collection. Most commercially prepared preservatives have a fill line on the container to indicate the quantity required. Follow manufacturer's instructions.

Specimen Handling:

- A. Specimen Labeling
 1. Place a patient identification label on the outside of the plastic tube.
 2. Place plastic tube into the metal can. Screw cap tightly.
- B. Requisition
 1. Fill out a DHEC form 1334 to accompany specimen. [See instructions for completing, Pg II-3.](#) Be sure to complete test specific information:
 - Reason for test: Mark X in the appropriate box.
 - Organism Suspected: Indicate organism suspected.
 - Test required: Mark X in the appropriate box.
 - Date Collected.

Collection for Ova and Parasites- Page 2 of 2

Specimen Preservation and Transport:

1. Wrap request form around the metal can containing the specimen. Place both into the cardboard container. Screw cap tightly.
2. Ship at room temperature to the Bureau of Laboratories

Specimen Rejection:

1. Specimen quantity insufficient.
2. Specimen too old.
3. No name on specimen or name on specimen differs from name on request form.
4. No requisition form submitted with specimen and insufficient information on specimen to identify sender or test needed.
5. Name on specimen differs from name on request form.

STOOL COLLECTION FOR OVA AND PARASITES

Note: This kit is for detection of cyst forms. Detection of trophozoites requires submitting the specimen in a preservative such as PVA (polyvinyl alcohol). Liquid stools are more likely to contain trophozoites and should be submitted in a preservative.

1. Have patient produce a bowel movement (number two) in a clean container or on a

newspaper.



2. Fill the plastic tube 2 full with bowel movement. Screw cap on tightly.



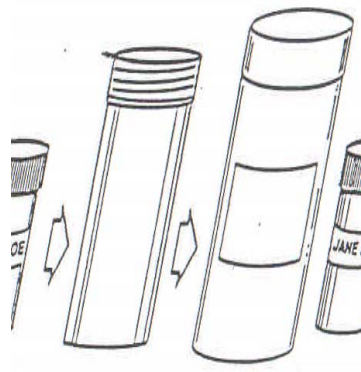
3. Print patient's name on the label of the plastic tube. Please keep outside of the tightly.

tube clean.



4. Put plastic tube into the metal can. Screw cap

**Wrap
contai**



5. Return the kit to the Health Department as soon as possible or bring specimen to the Bureau of Laboratories at 8231 Parklane Road, Columbia, SC. Specimens more than 2

days old may not yield accurate results.

SCDHEC. Designed by media services for the Bureau of Laboratories, 9/94 2A499A

PINWORM PREP

Principle:

Diagnosis of pinworm infection can be confirmed by the demonstration of *Enterobius vermicularis* ova in the perianal area.

Patient Preparation:

No special preparation.

Supplies:

1. Pinworm Prep. Slide
 - a. Cellulose (scotch) tape strip. Use clear tape. ***Do Not use frosted tape.***
 - b. Clean microscope slidePrepare slide as follows: Place strip of cellulose tape to cover slide, folding back approximately 2 inch piece on one end to form a tab.
2. Tongue depressor.
3. Slide label.
4. Slide mailing container.
5. DHEC Laboratory form # 1334, Parasitology (aqua).

Collection Procedure:

Best time for collection is a few hours after retiring or first thing in the morning before bowel movement.

1. Instruct patient or parent in collection procedure. (See illustration that follows.)
Give prepared slide, collection diagram and mailing container to patient or parent.
2. Instruct patient/parent on packaging and shipping of specimen to the laboratory.

Specimen Labeling:

- A. Specimen Labeling
 1. Label slide with patient's name.
- B. Requisition
 1. Fill out a DHEC 1334, Parasitology form to accompany specimen. [See instructions for completing, Pg II-3.](#) Be sure to complete specific test information:
 - Reason for test: Mark X in the appropriate box.
 - Test required: Mark X in the appropriate box.
 - Date Collected.

Specimen Preservation and transport:

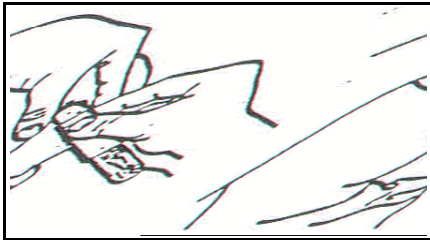
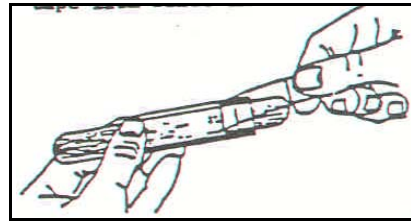
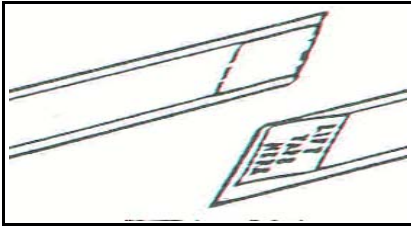
1. Place in slide mailing container
2. Ship at room temperature.

Specimen Rejection:

1. Frosted Tape used.
2. No name on specimen or name on specimen differs from name on request form.

PINWORM PREP

Use of cellulose tape slide for pinworm collection



- 1. Cellulose-tape slide preparation**
- 2. Hold slide against tongue depressor**
one inch from end of depressor.

Lift tape from slide.



- 3. Loop tape over end of tongue depressor**
sticky side out.

- 4. Hold tape and slide against tongue**
depressor.

5. Press tape to the anal region, to cover as much of the perianal area as possible. down. Apply the tape so as to prevent trapping air and slide.
6. Loosen end of tape from end of depressor and press tape onto slide, sticky side bubbles between tape

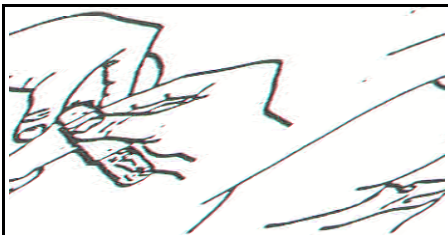
Note: Best time for collection is a few hours after retiring (10 or 11 pm) or first thing in the morning before bowel movement.

7. Use cotton or gauze to smooth tape down.

COLLECTION OF SKIN SCRAPINGS FOR SCABIES

Principle:

Diagnosis of scabies can be confirmed by demonstration of the mites, eggs or scybala (fecal pellets). Because the mites are located under the surface of the skin, scrapings must be taken from the infected area.



Supplies:

1. Mineral Oil.
2. Sterile scalpel blade.
3. Clean glass slide and coverslip.
4. Applicator stick.
5. Slide holder for mailing.

Safety Precautions:

Specimens must be handled with care. *Sarcoptes scabiei* is highly contagious. Wear gloves and lab coat while collecting specimens.



Collection Procedure:

1. Place a drop of mineral oil on a sterile scalpel blade. (Mineral oil is preferred over potassium hydroxide solution or water. Mites will adhere to the oil and oil will not dissolve fecal pellets).
2. Allow some of the oil to flow onto the papule.
3. Scrape vigorously six or seven times to remove the top of the papule. (There will be tiny flecks of blood in the oil).
4. Transfer the oil and scraped material to a glass slide. (An applicator stick can be used).

5. Add 1 or 2 drops of mineral oil to the slide and stir the mixture.
6. Place a coverslip on the slide.
7. Place slides in plastic slide box packaged in crushproof double-walled mailers.

Specimen Labeling:

- A. Specimen Labeling
 1. Place a patient identification label on the edge of the glass slide.
- B. Requisition
 1. Complete DHEC form # 1334. [See instruction for completing, Pg. II-3.](#)

Specimen Preservation and Transport:

1. Ship at room temperature.

Specimen Rejection:

1. Too much oil used (more than 2 drops).
2. No name on specimen or name on specimen differs from name on request form.

URINE DRUG SCREEN CHAIN-OF-CUSTODY PROTOCOL

When laboratory test results are to be used for legal purposes, a chain-of-custody protocol must be maintained for the urine specimens. Chain-of-custody is a protocol used to certify that a sample has not been compromised and meets the legal requirements for protection of evidence.

Procedure:

To properly collect a urine specimen for forensic urine drug testing.

Patient Preparation:

1. Preparation for Collection of Specimen:
 - a. Remove all chemicals or cleaning supplies from the bathroom.
 - b. Tape hot and cold water faucets or turn off water valve.
 - c. Put dye or food coloring in toilet bowl (preferably red or blue).
2. Complete DHEC form 1310, Toxicology, with exception of the Chain-of-Custody portion, which certifies specimen was sealed in the donor's presence. This section will be completed when the collection container has been sealed. Be sure that the PATIENT HISTORY section is completed. Explain to the donor that this section should include all medications, prescribed and over the counter, taken in the last two weeks. Include any illegal or illicit drugs.
3. Label Specimen Container:
 - a. Write donor's name (same as listed on the form) on the side of the cup.
 - b. Date Specimen collected.

When marking the container, use only blue or black permanent ink marking pens. The laboratory will provide suitable marking pens for labeling containers. The ink in other types of pens bleed and will not survive shipping leakage or condensation. If the writing is illegible or totally obliterated, the sample becomes unacceptable for COC purposes.

Supplies:

1. Collection Containers w/lids
2. Security Tape
3. Permanent Ink Marking Pens
4. Temperature Strips
5. Tamper-proof Bio-Hazard Bags
6. Shipping Containers
7. Integrity Seals
8. Mailing label for outside of box
9. DHEC form 1340 (Toxicology Lab Slips)

Urine Collection for Drug Screen, Page 2 of 3

Collection Procedure:

1. Collection may be made in either of two ways, direct or passive observation. Direct observation is used when you are collecting a repeat specimen after an earlier specimen was positive, for cause, or if you suspect that an attempt will be made to adulterate or substitute the specimen. Passive specimen collection procedures are normally used. This collection protocol allows the donor to provide the specimen in the privacy of a lavatory in or adjacent to the specimen collection room.
2. Instruct the passive collection donor that he, or she, will not be allowed to carry personal items (e.g. coats, purses, etc.) into the lavatory area. Write the name of the donor and date on the specimen container. Attach a temperature strip on the side of the container near the base. Give the container to the donor and instruct him to collect a minimum of sixty milliliters (2 fl. oz.). If donor cannot provide 60 ml, 30 ml is acceptable. Any specimen of less than 30 ml will be rejected for Chain-of Custody. If donor cannot provide the minimum quantity, he/she will be required to provide another specimen later using a clean container. The urine from the first attempt will be discarded. Donors who feel that they cannot provide the minimum and those who have tried and could not produce the minimum may be allowed access to drinking fluids to stimulate urine production. When the donor has provided the minimum quantity he is to seal the container and return it to the collector. **THE COLLECTOR AND THE DONOR MUST KEEP THE SPECIMEN IN VIEW AT ALL TIMES.**
3. The collector will record the temperature of the urine and examine the contents of the container for evidence of adulteration. Should the appearance or odor of the specimen seem unusual, document this suspicion on the lab slip. Record the temperature from the temperature strip attached to the collection container. **It is critical to check the temperature of the specimen within 4 minutes from collection.** The range of acceptable temperature is 90.56 to 99.8 degrees Fahrenheit. If the temperature of the urine does not fall within this range, it is not acceptable and must be recollected.
4. If the specimen meets all requirements, it must be sealed in the presence of the donor. Prior to sealing the container with a security seal, firmly grasp the cap and the container and turn the lid clockwise to ensure that the container is securely closed. The collector may now seal the specimen with the security seal, mark the tape with his/her initials, date it and have the donor initial the tape. Care should be taken not to cover the writing on the side of the container. One unbroken strip over the top and down the sides of the container is sufficient to maintain COC requirements.
5. When the specimen has been sealed and initialed, the COC portion of the lab slip, (DHEC form 1340) must be completed. On line 1, column 1, write in ACollection@ in column 2, write

Urine Collection for Drug Screen, Page 3 of 3

the word **ADonor@** or have Donor sign their name (either is acceptable); in column 3, write in the collector's name and in column 4, write in date. After the first line is completed, the collector should go to line 2, column 1, write **ATake to Lab@** in column 2, write the collector's name, in column 3, write in UPS, US Mail, Courier, or Fed. Express (which ever applies) and in column 4, write in date.

****NOTE****The collector must always fill out the **ACHain-of-Custody@**section of the form.

The collector must always fill out the first two lines.

6. The collector should then read the certification statement to the donor and have him/her place his/her signature and the current date on the line marked **ADonor Signature and Date@** The collector should sign his/her name on the line marked **ACollector's name and Date.** **If the form is missing either signature or date the specimen must be rejected.** After completing this section, the donor may be dismissed.

Failure to comply with the above protocol will result in loss of Chain-of Custody verification. The specimen will be tested as a NON chain-of-custody specimen.

Specimen Handling:

1. The collector should place a paper towel and the specimen into the bio-hazard bag. The towel will absorb any accidental leakage of the specimen. Tear off the original and second copy of the DHEC1310 form, fold and place inside the outside pocket of the bio-hazard bag. **Do not place the form inside the bag with specimen.**

Specimen Preservation and Transport:

1. The specimen must then be forwarded to the laboratory for testing.
 - a. Use the smallest box which will accommodate the number of specimens you are transporting to the lab for testing. Place bio-hazard bag into the shipping container. Place newspaper or paper towels around the bio-bag to absorb any leakage as well as maintain minimum movement of specimens during shipping. Seal the shipping container with tape.
 - b. Place Toxicology label on the outside of the box. Also, be sure to attach Integrity Seals (yellow labels) on the outside of the shipping box between the box flaps and the body of the shipping container.

Specimen Rejection:

1. Specimen is not at least 30 ml volume.
2. Form not filled out properly.
3. No date or initials on security tape.
4. Evidence of tampering with the mailing box or specimen.

For further information regarding Chain-of-Custody specimens, call (803) 896-0963.

page left blank for future expansion

Shipping Clinical Specimens By US Mail (revised 8-14-01)

NOTE: If shipping with another transporter (UPS, Federal Express, etc.) their shipping information must be followed and may be more restrictive than the United States Postal Service. This information is for clinical specimens; infectious substances have additional packaging and labeling requirements. This information is taken from the *Domestic Mail Manual Issue 55* and includes Postal Bulletin changes through PB 22035 (11-2-00).

Definitions:

Infectious substance (etiologic agent) means a viable microorganism, or its toxin, that causes or may cause disease in human beings or animals, and includes those agents listed in 42 CFR 72.3 and any other agent that causes or may cause severe, disabling, or fatal disease. The terms infectious substance and etiologic agent are synonymous.

Clinical (diagnostic) specimen means any human or animal material including, but not limited to, excreta, secretions, blood, blood components, tissue, and tissue fluids, collected and being shipped for purposes of diagnosis.

Primary receptacle is the container (e.g., tube, vial, bottle) that holds the specimen.

Secondary packaging is the container into which a primary receptacle is placed.

Outer packaging is the container into which a primary receptacle and secondary packaging, together with absorbent material and cushioning, are placed. The outer packaging bears the addressing information along with all required markings.

Packaging:

A clinical specimen such as urine container or blood tube must be packaged in a securely sealed secondary container (ziplock bag). The secondary container must be placed in the outside mailing container with sufficient absorbent material surrounding the primary container to absorb leakage should it occur during shipment.

The Bureau of Laboratories provides collection kits for specimens requiring special transport media or special collection utensil, and mailing containers for all clinical specimens. These containers are approved for shipping through the US Mail **if the screw top is taped to the fiberboard container**. Order kits and containers on DHEC form 1323. Do not wait until your supplies are depleted.

Materials:

1. Appropriate collection kit, Bureau of Laboratories mailing container, or cardboard shipping box.
2. Ziplock biohazard bag with liquid absorber pack or other absorbent material. (**Exception: Dried blood spots should not be placed in plastic bags**)
3. Laboratory request form
4. Cushioning material such as paper towels (not supplied) or bubble wrap (not supplied).

Shipping Specimens by US mail, page 2 of 3

Procedure:

1. Label the specimen container (primary container) with patient identification. Always label the specimen collection container before giving it to the patient, if self collection.
2. If using a collection kit, assemble as directed.
3. Place specimen container(s) in the ziplock biohazard bag. **Make sure liquid absorber pack (absorbs up to 50 ml.) is in bag or bag contains other absorbent material which will absorb liquid content of specimen if the specimen leaks.** Up to 50 ml of specimens may be placed in each ziplock biohazard bag. **Exception: Dried blood spots should not be placed in plastic bags.**
4. Place laboratory request form(s) in the ziplock biohazard bag outside pocket. For kits wrap the request around the secondary container (usually a metal can). Place dried blood spots directly in paper envelope.
5. Wrap cushioning material around the ziplock bag to keep specimen from breaking and assure that the ends of the specimen are protected. Place wrapped ziplock bag in outer packaging container. Add cushioning material if needed to keep specimen from moving in container. Place an itemized list of contents in the outer packaging container. The laboratory request form may serve as a list if it gives the specimen being shipped, such as 1 tube of blood. The outer packaging container may be a cardboard box or a Bureau of Laboratories fiberboard mailing container, if the lid is taped to the fiberboard container. Check limitations section below for special requirements for volumes exceeding 50 ml.
6. If a Bureau of Laboratories cylindrical mailing container is used, screw lid securely (straight and tight) on mailing container. Make sure you have not cross- threaded the lid. **Using mailing or sealing tape, tape the edge of the screw cap to the fiberboard container.** This is necessary to ensure the lid does not loosen during shipping. If using a cardboard box close box with mailing or sealing tape.
7. Place mailing label on outer packaging container. The mailing label should have the name, address and **telephone number of the sender** and the name and address of the receiver.
8. Check the top of the address label on the outer packaging container for clinical specimen information, verify that the specimen (blood, stool, sputum) described is the specimen you are shipping. If the mailing label already has this information, you may need to check the correct square that describes the contents of the container. If the label does not have the information, write Clinical Specimen and the type of sample on the outside container above the mailing label (example - **ACLINICAL SPECIMEN - Blood Sample@OR ACLINICAL SPECIMEN - Urine Sample@**). **If a Bureau of Laboratories supplied mailer is being used, print your name on the line ASpecimen Packed by: _____@and write in shipper's telephone number on the next line.**

Shipping Specimens by US mail, page 3 Of 3

9. If shipping by US mail, print the words **FIRST CLASS** below the postage stamps.
10. Ship by state courier or first class US Mail.

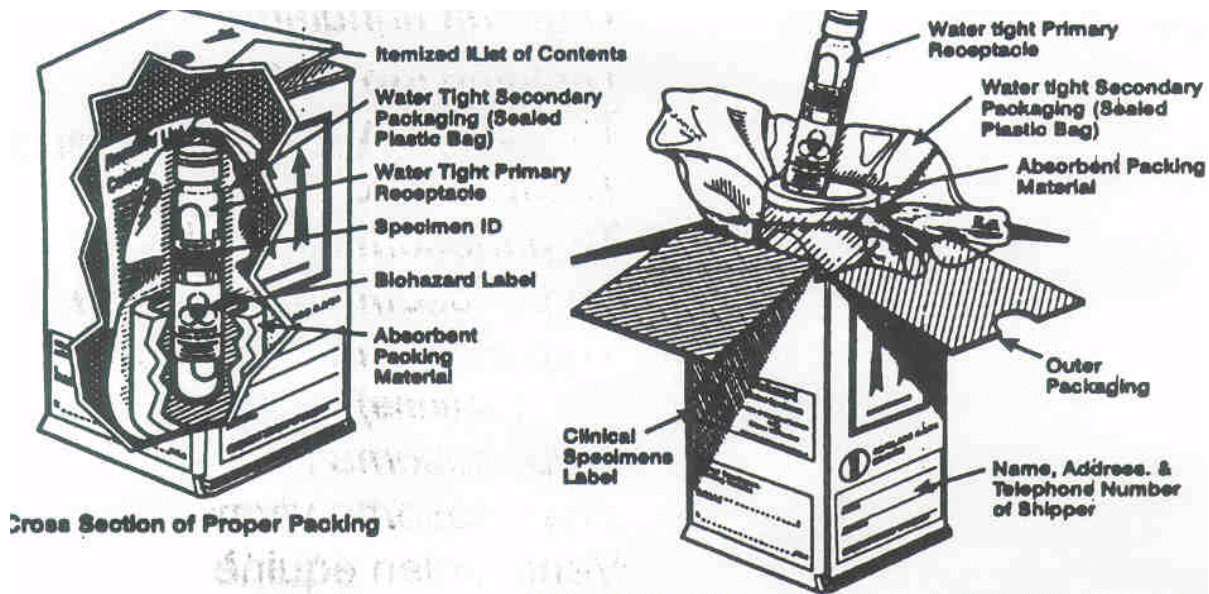
Limitations:

1. Clinical specimens exceeding 50 ml must be packaged in a fiberboard box or shipping container of equivalent strength.
2. Single containers must not contain more than 1,000 ml (1 quart) of material.
3. The maximum volume of clinical specimens that may be enclosed in a single outer shipping container is 4,000 ml (4 quarts.)

References:

1. CO23.1.1, *UNITED STATES POSTAL SERVICE DOMESTIC MAIL MANUAL*, Issue 55 Plus Postal Bulletin Changes Through PB 22036 (11-2-00).

Diagram:



Packing and Labeling of Clinical Specimens

NOTE: A cylindrical fiberboard mailer may be used for the outer packaging if the screw on top is taped with mailing tape to the fiberboard cylinder. Bureau of Laboratory mailing labels will soon include the **AClinical Specimen Label**. Packaging and labeling requirements for infectious materials are more stringent, visit the US Postal Services web site (<http://pe.usps.gov>) for more information.

SHIPPING CLINICAL SPECIMENS BY COURIER

A clinical specimen is any human specimen including, but not limited to excreta, sputum, blood and its components, and urine.

Packaging:

The Bureau of Laboratories provides collection kits for specimens requiring special transport media or special collection utensil, and mailing containers for all clinical specimens.

Order containers with DHEC form 1323. Do not wait until your supplies are depleted.

Materials:

1. Appropriate collection kit, DHEC mailing containers, or laboratory shipping box
2. Biohazard bag (**Exception: Dried blood spots should not be placed in plastic bags**)
3. Laboratory request form
4. Absorbent material such as paper towels or bubble wrap (not supplied)

Procedure:

1. Label the specimen container, e.g., tube of blood or inner container of kit, with patient identification. Always label a collection container before giving to the patient if for self collection.
2. If using a kit for the specimen, assemble as directed.
3. For other specimens, place in biohazard bag and seal the bag. If more than one specimen is put in the biohazard bag, wrap each specimen with absorbent material. (**Exception: Dried blood spots should be placed directly in paper envelope. Do not put in plastic bags.**)
4. Place laboratory request form(s) in the biohazard bag outside pocket.
For kits wrap the request around the inner container.
5. Place biohazard bag with request form(s) in mailing container. Use absorbent material to keep specimen from rattling.
6. Place ready to mail specimen(s) in designated area for courier pickup.

DELIVERING SPECIMENS DIRECTLY TO THE BUREAU OF LABORATORIES

Individuals:

Individuals delivering specimens should enter the front of the building and see the security officer. All specimens must be labeled with patient identification and accompanied by a request form specifying the testing required.

Couriers after 3:30 P. M.

Specimens delivered by courier after 3:30 P.M. may be placed in the after hours depository in the rear of the building if they will not be harmed by refrigeration. Specimens must be surrounded by ample absorbent material and be in a moisture proof external container. Do not drop unprotected specimens into the depository. Specimens should be packed to absorb the shock of being dropped.

SECTION III

PANELS AND ALPHABETICAL TEST LISTING

PANELS AVAILABLE TO DHEC CLINICS & BY SPECIAL ARRANGEMENT

GENERAL PANEL I		GENERAL PANEL II	GENERAL PANEL III
CPT CODE: Use individual analyte codes shown in last column			
Glucose		Glucose	82947
Uric Acid		Uric Acid	84550
Cholesterol, total		Cholesterol, total	83718
AST (SGOT)		AST (SGOT)	84450
Total Protein		Total Protein	84155
Albumin		Albumin	82040
*Globulin		*Globulin	Na
Total Bilirubin	Total Bilirubin	Total Bilirubin	82247
Calcium	Calcium	Calcium	82310
BUN	BUN	BUN	84520
Creatinine	Creatinine	Creatinine	82565
	*BUN/Creatinine Ratio	*BUN/Creatinine Ratio	Na
	Alkaline Phosphatase	Alkaline Phos.	84075
	Phosphorus	Phosphorus	84100
	LDH	LDH	83615
	ALT (SGPT)	ALT (SGPT)	84460
		Sodium	84295
		Chloride	82435
		Triglycerides	84478
		CK	82550
		GGT	82977

LIPID PANEL with GLUCOSE

CPT CODE: 80061, 82947

Cholesterol, Total
Triglycerides
HDL
LDL*
Glucose

LIVER PANEL

CPT CODE: 80076 + 82465 (cholesterol)

AST (SGOT)
ALT (SGPT)
Alkaline Phosphatase
Total Bilirubin
Cholesterol
Total Protein
Albumin
*Globulin
LDH

TB PANEL

CPT CODE:

AST (SGOT) 84450
ALT (SGPT) 84460
Total Bilirubin 82247
Uric Acid 84550
*BUN ratio
Creatinine 82565
Glucose 82947

MISCELLANEOUS

CPT CODE: 82150

Amylase

*Calculated Values have no CPT codes and cannot be billed

Use red-top vacuum tube to collect specimen. 5-7 ml required. Interpretation of results by reference values printed on results report.

PANELS AVAILABLE TO DHEC CLINICS & BY SPECIAL ARRANGEMENT

HEMATOLOGY- CBC

CPT CODE: 85023 + 85046(retic)

Test Section: Hematology

Days Test performed: Monday- Friday

Specimen: 1 EDTA vacutainer

Volume: 5-7 ml

Interpretation: Reference values shown on report

Request Form: 1357

Hemoglobin

Hematocrit

Platelets

Leukocytes

Erythrocytes

MCV

MCH

MCHC

Differential Count

PRENATAL BATTERY

CPT CODE: 80055

Test Section: Diag. Serology & Hematology

Days Test Performed: Monday- Friday

Specimen: 1 EDTA & 1 red-top vacutainer

Volume: 5-7 ml. Each tube.

DO NOT T USE SERUM SEPARATOR TUBES

Request Form: 1336 Test #3000

Special Instructions : For AB screen

- if transport time >48 hours, separate serum from clot. If repeat testing is required, see individual test request

RPR Rubella

RH Hepatitis B

ABO HIV (if requested)

Ab Screen

CBC (if requested)

URINALYSIS

Test Section: Hematology

Specimen: 10 ml urine

Note: Only available in Columbia area when specimen can be delivered directly to the laboratory

Test: Includes Microscopic and Biochemical

CPT Code: 81000

THERAPEUTIC DRUG SCREEN

Test Section: Toxicology

Days test performed: Monday-Friday

Specimen: 5 ml whole blood or 2 m serum

Request form: 1340 Test # 810

CPT codes: Tegretol- 80156;

Phenytoin-80185;

Phenobarbital- 80184

Valproic Acid-80299

CERVICAL/ VAGINAL CYTOLOGY-

Synonyms: Paps smear

Test Section: Cytology

Days Test Performed: Monday-Friday

Request form: GYN Cytology 1362 ; test # 65000

Specimen: fixed Cervical or vaginal smear

Storage/Shipping: Slides may be stored indefinitely when spray-fixed. Ship to lab in Cardboard slide holder

Causes for Rejection: No name on slide, no request form, air drying of slide, severely broken slide

Use: Screening for presence of atypical, pre-neoplastic and neoplastic cells: screening for presence of certain types of genital infections; evaluation of hormonal function (vaginal smears only)

Methodology: Microscopic observation of stained smears

Interpretation: Findings are reported using the Bethesda System

CPT Code: screen 88164; physician's interpretation 88141

TEST INFORMATION

ABSCESS CULTURE - "See Bacterial Culture"

ACANTHAMOEBA CULTURE - See "Amoeba Culture"

ACID FAST BACILLI CULTURE (AFB) - See "Mycobacterial Culture"

ADENOVIRUS CULTURE

Synonyms: Also included in respiratory culture battery

Test Section: Virology, 803-896-0820/0819

Days Test Performed: Monday-Friday

Request Form: 1337 Test #27000

Special Instructions: Collect specimen while patient is acutely ill and febrile.

Specimen& Volume: 5 ml [Throat washing](#) or Urine, Tissue (fresh, unfixed), N-P swab, CSF, Conjunctival swab, Rectal swab, 2 EDTA tubes whole blood.

Container: Viral transport media provided on request.

Storage/Shipping: keep cold and ship within 24 hrs. If later, ship frozen (except blood). **Blood should not be frozen.**

METHODOLOGY: Cell culture ; ID by FA

CPT Code: Culture 87252; Identification 87253

ADENOVIRUS SEROLOGY

Synonyms: Test is also included in Respiratory Battery.

Test Section: Virology, 803-896-0819

Days Test Performed: monthly

Request Form: 1301 Test #10300

Special Instructions: Paired sera-acute and convalescent specimens, taken two weeks apart.

Specimen& Volume: 5 ml. blood or 2 ml serum [venipuncture procedure](#)

Container: Sterile red top vacuum tube

Methodology: Complement-Fixation (CF)

Interpretation: A 4-fold or greater rise in CF titer (e.g., from < 1:8 to 1:16, or from 1:32 to 1:128) between the acute and convalescent serum specimens is considered diagnostically significant. A titer of < 1:8 (or < 1:2) means negative at that dilution.

CPT Code: 86171

AEROBE REFERRED FOR IDENTIFICATION

Synonyms: Aerobic Culture; Salmonella, Shigella, Campylobacter, Pseudomonas, Streptococcus, etc.; culture for identification

Test Section: Bacteriology/Parasitology, 803-896-0805

Days Test Performed: Monday - Friday

Request Form: 1345 Test #51100

Specimen: Pure bacterial isolate

Volume: Agar slant

Container: Sterile screw-capped tube containing agar medium that will support growth of isolate

Storage/Shipping: Room temperature; ship in double-walled mailing container

Causes for Rejection: Culture nonviable; culture mixed; broken in transit; no name on specimen

Methodology: Conventional biochemicals

CPT Code: 87077

AEROBIC ACTINOMYCETE CULTURE - See AFungal Culture@

AIDS SEROLOGY - See "HIV-1 Serology"

ALCOHOL SCREEN - See "Drugs of Abuse Screen, Urine"

AMOEBAE CULTURE

Synonyms: Acanthamoeba culture, Naegleria culture

Test Section: Bacteriology/Parasitology, 803-896-0804

Days Test Performed: Monday - Friday

Request Form: 1334 Test #41100

Special Instructions: Notify Parasitology lab prior to submission. Protect specimen from cold.

Specimen: CSF or tissue (brain, lung, corneal scrapings) in small amount of Page's amoeba saline

Volume: 1 ml CSF or small piece of tissue

Container: Sterile, screw-capped tube

Storage/Shipping: Room temperature (NOT COLD!)

Causes for Rejection: Specimen refrigerated or frozen.

Use: Culture for the presence of Acanthamoeba or Naegleria.

Methodology: Culture and microscopic examination

CPT Code: 87169

AMPHETAMINES SCREEN - See "Drugs of Abuse Screen, Urine"

ANAEROBE CULTURE - See "Bacterial Culture"

ANAEROBE CULTURE, REFERRED ISOLATE

Synonyms: Anaerobe referred for identification

Test Section: Bacteriology/Parasitology, 803-896-0805

Days Test Performed: Monday - Friday

Request Form: 1345 Test #51100

Specimen & Volume: 5-8 ml Pure isolate in thioglycollate broth

Container: Sterile screw-capped tube. Overlay broth with approximately 3/4 inch sterile Vaseline or vaspar or use anaerobe transport system.

Storage/Shipping: Ship at room temperature in double-walled mailing container.

Causes for Rejection: Leaked in transit; broken in transit; *body site not appropriate for anaerobe culture*; inappropriate transport; mixed culture; improper labeling; more than 3 different organisms submitted from a single body site

Methodology: Conventional culture methods and gas liquid chromatography

CPT Code: 87076 and 87143 (GLC)

ARBOVIRUS SEROLOGY

Synonyms: Test includes EEE, WEE, SLE, CAL

Test Section: Virology, 803-896-0819

Days Test Performed: Monthly, or as needed

Request Form: 1301 Test #11700, #11701 EEE, #11702 WEE, #11703 SLE,

Special Instructions: paired specimens NOT required.

Specimen & Volume: 5 ml blood or 2 ml serum. See [Venipuncture](#).

Container: Sterile red top vacuum tube

Methodology: IFA

CPT Codes: EEE 86652, WEE 86654, SLE 86653

ASBESTOS (Air-Sampling)

Synonyms: Fiber counts

Only performed for SC Department of Labor, Licensing and Regulation

Test Section: Special Chemistry, 803-896-0885

Days Test Performed: Monday - Friday

Request Form: 1348 Test #86400

Special Instructions: Samples must be collected on a 37 mm MCE filter using a non-conductive cowl extension. Sampling conditions must include flow-rate and total time of collection.

Causes for Rejection: Filter too dirty to be cleared.

Methodology: Phase contrast Microscopy

CPT Code: Environmental Culture

ASBESTOS (BULK)

Synonyms: Chrysolite, Amosite, Crocidolite

Only performed for SC Department of Labor, Licensing and Regulation

Test Section: Special Chemistry, 803-896-0885

Days Test Performed: Monday - Friday

Request Form: Environmental. Epidemiology; 1348 Test #87500

Special Instructions: No liquids or semi-solid samples

Volume: 1 tbsp of homogeneous sample

Container: Zip-lock bag

Methodology: Polarized-light Microscopy

CPT Code: Environmental Culture

BACTERIAL ISOLATE, REFERRED FOR ID - See Aerobe or Anaerobe referred for ID.
BARBITURATE SCREEN, URINE - See "Drugs of Abuse Screen"

BENZOYLECGONINE - See "Cocaine Screen"

BETA-HEMOLYTIC STREPTOCOCCUS , GROUP A CULTURE

Synonyms: Beta Strep culture; Throat culture; group A strep culture; Streptococcus paganize culture

Test Section: Bacteriology/Parasitology, 803-896-0805

Days Test Performed: Monday - Friday

Request Form: 1345 Test #50900

Specimen & Volume: 1 Throat swab

Container: Swab submitted in transport medium (culturette)

Storage/Shipping: Room temperature

Causes for Rejection: Ampule in transport not crushed ; improper labeling

Methodology: Conventional culture methods

CPT Code: 87070

BETA-HEMOLYTIC STREPTOCOCCUS GROUP B CULTURE

Synonyms: Group B Strep culture, strep vaginal culture

Test Section: Bacteriology/Parasitology, 803-896-0805

Days Test Performed: Monday - Friday

Request Form: 1345 Test #51000

Specimen: Swab. [See culturette collection procedure.](#)

Volume: 1 Swab

Container: Swab in transport tube (culturette)

Storage/Shipping: Room temperature

Causes for Rejection: Ampule in culturette not broken, swab contaminated with feces; improper labeling

Methodology: Conventional culture methods

CPT Code: 87070

BLOOD LEAD -See Lead, Blood

BLOOD PARASITE EXAMINATION - See "Malaria Smear@

BORDETELLA PERTUSSIS

Synonyms: Pertussis, whooping cough; *B. pertussis* culture; *B. pertussis* FA

Test Section: Bacteriology/Parasitology, 803-896-0805

Days Test Performed: Monday - Friday

Request Form: 1345 Test #51000 for culture; Test #51300 for FA

Specimen: Nasopharyngeal swab preferred; throat swab; slides for FA (no fixative)
[See collection procedure.](#)

Volume: One swab and/or 2 slides for FA

Container: Regan-Lowe transport tube (streak slant; then immerse swab into medium immediately after collection of specimen). Use separate swab to prepare smear for FA. Calcium alginate swab recommended. Regan-Lowe available from Bureau of Laboratories Media Room.

Storage/Shipping: Ship at room temperature. Use county health department courier if possible. Regan-Lowe may be incubated aerobically for 24-48 hours at 35E C if shipping is delayed.

Causes for Rejection: Improper transport medium; specimen too old; Regan-Lowe medium expired.; unlabeled specimen

Methodology: Conventional culture methods, Direct FA

CPT Code: *B. pertussis* culture - 87070; *B. pertussis* FA - 87206

***BORDETELLA PERTUSSIS* SMEAR FOR FA**

Synonyms: Whooping Cough

Test Section: Bacteriology/Parasitology, 803-896-0805

Days Test Performed: Monday - Friday

Request Form: Bacteriology; 1345 Test #51300

Specimen: Smear from nasopharynx or throat

Container: Slide mailer

Causes for Rejection: unlabeled specimen; broken in transit

Methodology: Fluorescent Antibody Stain

CPT Code: 87206

BOTULISM

Prompt diagnosis and early treatment of botulism are essential to minimize the otherwise great risk of death. State Health Departments and the Center for Disease Control & Prevention (CDC) offer 24-hour diagnostic consultation, epidemic investigation assistance, and laboratory services. Trivalent (ABE) Botulinal Antitoxin is available from the CDC. In order to receive these services, it is necessary to notify:

- a) The DHEC/Bureau of Epidemiology, Disease Control & Surveillance consultant at **(803) 898-0713** (M-F during business hours) or digital pager **(803) 690-3756** (after hours);
- b) After proper consultation, the CDC Bureau of Foodborne Diseases medical consultant at **(404)639-2206** (daytime office) or through the CDC operator at **(404)639-2888-3311**. Arrangements can then be made for immediate shipment of the antitoxin, when indicated, and for proper shipment of selected clinical specimens and/or food samples for testing.

CAMPYLOBACTER - See "Stool Culture for Enteric Pathogens@

CD4 - See "Lymphocyte Subset"

CELLOPHANE TAPE PREP - See "Pinworm Exam"

CHAGAS DISEASE - See "Parasite Serology"

CHAIN-OF-CUSTODY PROTOCOL (Drug Screens Only)

Test Section: Toxicology 803-896--0955

Days Test Performed: Monday - Friday

Request Form: Toxicology, 1340 Test #82000

Special Instructions: Chain-of-custody handling requires the use of a special collection kit obtained from the laboratory. There is a fee per sample for maintaining chain-of-custody handling. All chain-of-custody samples with positive drug of abuse results will be confirmed by Gas Chromatography/Mass Spectrophotometry (GC/MS) for an additional fee per sample. [See collection procedure.](#)

Container: Chain-of-Custody specimen collection kit

Causes for Rejection: When chain-of-custody protocol is not followed or chain-of-custody collection kit is not used.

Use: Chain-of-custody protocol must be maintained and documented at all times when handling specimens collected for legal purposes.

CHLAMYDIA ANTIGEN DETECTION

Synonyms: Gen-Probe CT, CT antigen, *Chlamydia trachomatis* antigen.

Test Section: Diagnostic Serology, 803-896-0811

Days Test Performed: Monday - Friday.

Request Form: 1354 or 1325B; Test 50702 - Chlamydia; OR Test 50700 - Chlamydia and GC

Special Instructions: Only use Gen-Probe Pace Specimen Collection Kit materials.

Specimen: same specimen can be used for both CT and GC. Endocervical and male urethral Gen-Probe swabs in Gen-Probe Transport Media. [See collection procedure.](#) Vaginal samples will be tested but reported with a disclaimer.

Storage/Shipping: Room temperature. Specimen must arrive at lab within 7 days of collection.

Causes for Rejection: Specimens from nongenital sites will be rejected. This test is not appropriate in cases of assault or abuse. Improperly collected specimens and those received more than 7 days after being collected will not be tested. Patients twelve years old and younger should be tested by culture.

Methodology: Nucleic acid hybridization and detection by chemiluminescence.

CPT Code: 87490 for chlamydia only; use 87490 and 87590 (GC) for combination test 50700

CHLAMYDIA TRACHOMATIS CULTURE

Test Section: Virology, 803-896-0819

CHLAMYDIA TRACHOMATIS CULTURE, CONT

Days Test Performed: Tuesday and Friday

Request Form: 1354 Test #25600 or revised 1325B form

Special Instructions: Culture from non-genital specimens only. [See collection procedure.](#)

Specimen: Respiratory specimens, eye (conjunctival), rectal swabs, and specimens for suspected child abuse or genital specimen from hysterectomy patients.

Container: Use 2 SP Media (Chlamydia transport media).

Storage/Shipping: Ship on wet ice, within 24 to 48 hours after collection. For longer periods of time freeze at - 70EC and ship on dry ice.

CPT Code: 87110

CLOSTRIDIUM DIFFICILE

Synonyms: *Clostridium difficile* culture; *Clostridium difficile* toxin assay; Pseudomembranous colitis toxin assay

Test Section: Bacteriology/Parasitology, 803-896-0805

Days Test Performed: Wednesday;

Note: This test is offered as a reference procedure. It is not routinely available.

Request Form: 1345 Test #51000

Specimen & Volume: 5 ml. Feces collected in clean container or referred bacterial isolate

Container: Leak-proof, clean container for feces; bacterial isolate in thioglycollate in screw-capped tube overlaid with sterile Vaseline.

Storage/Shipping: Freeze fecal specimen and submit on dry ice; specimens arriving within a few hours of collection may be submitted on cold pack. Submit thioglycollate at room temperature.

Causes for Rejection: Fecal specimen not cold; quantity not sufficient; unlabeled specimen

Methodology: Conventional culture methods, cell culture toxin B assay

CPT Code: 87046 (Stool Culture); 87230 (toxin B assay)

CMV - See "Cytomegalovirus Culture" or "Serology"

COCAINE & MARIJUANA SCREEN, URINE

Synonyms: Benzoyllecgonine & Cannabinol, Drugs of Abuse Screen

Test Section: Toxicology/Clinical Chemistry, 803-896-0891

Days Test Performed: Monday - Friday

Request Form: Toxicology; 1340 Test #81300

Special Instructions: See [Chain-of-Custody protocol](#) if needed.

Specimen: Random urine

Volume: 25 ml

Container: Plastic urine container

Methodology: Immunoassay/gas-liquid chromatography (GLC)

CPT Code: 80100

CONGENITAL ADRENAL HYPERPLASIA - See "Newborn Screening"

CORYNEBACTERIUM DIPHTHERIAE

Synonyms: *C. diphtheriae*

Test Section: Bacteriology/Parasitology, 803-896-0805

Days Test Performed: Monday-Friday

Request Form: 1345 Test 51000 (clinical material or swab) or test 51100 (referred isolate)

Specimen: Throat swab; referred isolate

Container: Submit swab in transport tube (culturette), submit referred isolate on agar slant in screw capped tube. [See collection procedure.](#)

Storage/Shipping: Crush-proof double-walled mailer at room temperature

Rejection Criteria: Improper transport conditions, no name on specimen or name on specimen and request form differ

Use: Detection of *Corynebacterium diphtheriae*

Methodology: Conventional culture methods

CPT Code: 87070

COXSACKIE VIRUS A & B CULTURE - See "Enterovirus Culture"

CRYPTOCOCCUS NEOFORMANS- see AFungal Culture@

CRYPTOSPORIDIUM STAIN

Test Section: Bacteriology/Parasitology, 803-896-0804

Days Test Performed: Monday - Friday

Request Form: 1334 Test #40600

Specimen: Fresh stool, formalin preserved stool, duodenal fluid, or bile

Volume: Walnut-sized portion or 3 ml of liquid stool

Container: Screw-capped tube or tube w/ 10% formalin

Storage/Shipping: Room temperature - double-walled mailing container

Causes for Rejection: Specimen preserved in PVA; improper labeling

Use: To detect the presence of *Cryptosporidium* oocysts

Methodology: Microscopic exam of acid fast stained smear; FA stain

CPT Code: 87015, 87272

CYCLOSPORA

Synonyms: *C. cayetanensis*

Test Section: Bacteriology/Parasitology, 803-896-0804

Days Test Performed: Monday - Friday

Request Form: 1334 Test 41000

CYCLOSPORA , CONT

Specimen: Fresh stool; stool preserved in 10% formalin

Volume: Walnut-sized portion of fresh stool; or walnut-sized portion of feces in 15 ml of 10 % formalin

Container: Screw-capped tube

Storage/Shipping: Double-walled mailing container

Cause for Rejection: Specimen preserved in PVA; improper labeling

Use: To detect the presence of cyclospora

Methodology: Microscopic exam of acid-fast stained smears

CPT Code: 87015 (concentration); culture 87206

CYSTICERCOSIS - See "Parasite Serology"

CYTOMEGALOVIRUS CULTURE

Synonyms: CMV

Test Section: Virology, 803-896-0819

Days Test Performed: Monday-Friday

Request Form: 1337 Test #27300

Special Instructions: Refrigerate immediately upon collection. **DO NOT FREEZE SPECIMENS.**

Specimen: Urine (preferred specimen); tissue; Buffy coat - (submit 2 EDTA tubes - **PLEASE CALL PRIOR TO COLLECTION**), bronchial wash, CSF, etc.

Storage/Shipping: Ship **COLD** within 24 - 48 hours. **DO NOT FREEZE.**

CPT Code: Culture 87252; Identification 87253

CYTOMEGALOVIRUS SEROLOGY

Synonyms: CMV

Test Section: Virology, 803-896-0819

Days Test Performed: Weekly

Request Form: 1301 Test #10800; Immune status (single specimen); test #13900 diagnostic (paired sera)

Specimen: Whole clotted blood or serum. See [venipuncture procedure](#) if needed.

Volume: 5 ml blood; 2 ml serum

Container: Red top vacuum tube

Methodology: EIA

Interpretation: Reported as positive or negative or equivocal. Diagnostic results are positive, negative, or equivocal with comment attached when needed, indicating current infection.

CPT Code: 86644

DAIRY PRODUCTS EXAMINATIONS

The Dairy Products Section performs test on dairy products to assure the public that the standards for bacterial limits and butterfat levels as defined by the S.C. Milk Standards and Regulations are maintained and that milk is free of antibiotics or added water. Products from each dairy in S.C. are examined at least eight times a year. Tests are performed on pasteurized milk and other dairy products including creams, ice creams and other frozen desserts. Raw milk from dairy farms is tested with the same frequency.

Samples are collected by environmentalists from the DHEC Dairy Bureau.

If milk or other dairy products are believed to be the cause of a food borne illness, the sample is handled through the county health department, and is tested in the Food Section of the Bureau of Laboratories. Please call the Environmental Health Section of your local County Health Department for help.

DIPHTHERIA - See *ACorynebacterium Diphtheriae*@

DRUGS OF ABUSE SCREEN, URINE

Synonyms: Panel Includes Amphetamine, Barbiturate, Cannabinoid, Opiate, Cocaine, Benzodiazepine, Propoxyphene, Methadone, Methaqualone, Phencyclidine and Alcohol

Test Section: Toxicology/Clinical Chemistry, 803-896-0891

Days Test Performed: Monday - Friday

Request Form: Toxicology; 1340 Test #81100

Special Instructions: See [chain-of-custody protocol](#).

Specimen: Random urine

Volume: 25 ml

Container: Plastic urine container

Storage/Shipping: Refrigerate if longer than 24 hours for shipping

Methodology: Immunoassay

CPT Code: 80101(X 12 classes); For confirmation of positives, add 80102.

EASTERN EQUINE ENCEPHALITIS - See "Arbovirus Serology"

ECHO - See "Enterovirus Culture"

E. COLI O157 - See " Enteric Pathogens Culture @

ENCHINOCOCCOSIS - See "Parasite Serology"

ENTERIC PATHOGENS CULTURE

Synonyms: Fecal Culture, Enteric Culture, Salmonella Culture, Shigella Culture

Test Section: Bacteriology/Parasitology, 803-896-0805

Days Test Performed: Monday - Friday

Request Form: 1345 Test #50800

Specimen: Feces collected in clean container and transferred to transport medium. Infant specimens may be collected in a disposable diaper with plastic side facing inside. DO NOT COLLECT FROM TOILET.

Volume: Walnut size portion or 5-10 ml of liquid stool added to Enteric Kit. See [collection procedure for enterics](#). Submit swabs in Cary-Blair tube or culturette tube. If these are not available, pour out 2/3 of the liquid in the Enteric Collection Kit and submit swab immersed in remaining liquid. **SWABS MUST BE COATED WITH FECAL MATERIAL.**

Container:

Enteric Bacteriology Kit (liquid Cary-Blair) is used when *E. coli* 0157, *Salmonella*, *Shigella*, *Yersinia*, *Staphylococcus*, *Bacillus cereus*, *Vibrio*, or *Campylobacter* is suspected.. **Culturettes** (Stuart's medium) may be used for *Salmonella*, *Shigella*, *Yersinia*, *Staphylococci*, *Bacillus cereus*, or *E. coli* 0157. Recommended only when rectal swabs must be collected. * *Clostridium perfringens* **quantitative cannot** be performed on a swab specimen. Submit a walnut sized portion of feces in a sterile container. Ship on a cold pack to arrive in the laboratory less than 24 hours after collection.

Storage/Shipping: Stools not in holding medium must be transported on cold pack to arrive in the lab and be inoculated within 24 hours of collection. If the specimen is in transport medium, it must be received at the lab within 48 hours of collection. Transport at room temperature in double walled crush-proof mailer.

Causes for Rejection: Quantity insufficient, specimen too old, improper transport media; improper labeling.

Methodology: Conventional culture methods and biochemicals; serological tests for *Shigella*, *E. coli* 0157:H7, *V.cholera* and *Salmonella* including *Salmonella* serotyping.

CPT Code: 87045 *Salmonella* and *Shigella*; 87046 all others

ENTEROBIUS VERMICULARIS - See "Pinworm Exam"

ENTEROVIRUS CULTURE

Synonyms: Includes ECHO, Coxsackie, Polio

Test Section: Virology, 803-896-0819

Days Test Performed: Monday - Friday

Request Form: 1337 Test #27000

Specimen: Throat swab, ([collection procedure](#)) rectal swab, N-P swab, feces, ([collection procedure](#)) CSF

Container: Viral transport media provided upon request

Storage/Shipping: Ship COLD within 24 - 48 hours or freeze specimen and ship on dry ice.

CPT Code: Culture 87252; ID 87253

ENVIRONMENTAL LEAD- See Lead, Environmental

FILARIASIS - See "Parasite Serology"

FLUORESCENT TREPONEMAL ANTIBODY

Synonyms: FTA

Test Section: Virology, 803-896-08219

Days Test Performed: Once a week

Request Form: DHEC 1359 Test #2

Special Instructions: M.A.-TP is the test routinely performed.

Specimen & Volume : 2 ml Serum. [See Venipuncture procedure if needed.](#)

Methodology: IFA

Interpretation: Non-reactive, Minimal reactive, and Reactive

CPT Code: 86781

FOOD-BORNE ILLNESSES (FOOD POISONING)

The Food Microbiology Section assists physicians and local health department officials in the diagnosis and epidemiological investigation of suspected food borne illness.

A physician with a patient suspected of having a food borne illness should contact Food Protection in the local county health department for assistance in the collection and shipment of food samples.

The laboratory does not accept food samples directly from individuals.

FTA- See fluorescent treponemal antibody

FUNGAL CULTURE, PRIMARY ISOLATION AND IDENTIFICATION

Note: Restricted to County Health Departments, State/County Hospitals, Veterinary sources; otherwise, prior consultation is required.

Synonyms: Mycology, Fungus, Mold culture, Yeast Culture, Aerobic Actinomycete

Test Section: Mycology, 803-896-0961

Days Test Performed: Monday - Friday

Request Form: DHEC 1333 Test #30100

Special Instructions: [See fungal culture collection procedures.](#) Collect using aseptic technique.

Sputum: Collect deep cough specimen in morning after patient's teeth have been brushed and mouth rinsed with mouthwash.

Skin Scrapings: Clean lesion, scrap material from periphery of lesion, collect any exudate.

Hair: Collect short, broken hairs and roots.

Nail Scraping: Shave cleaned nails from the proximal to the distal end and collect debris under the nail plate.

FUNGAL CULTURE, PRIMARY ISOLATION AND IDENTIFICATION, CONT

Specimen & Volume: Sputum, bronchial washing, aspirates, exudates, CSF, blood, bone marrow, tissue - 5 ml; urine or body fluids- 50 ml.; skin, hair, nails-- 8-10 visible pieces of scrapings or broken hairs; swabs of conjunctiva and throats.

Container: Sterile screw cap container

Storage/Shipping: Maintain specimen at room temperature. Ship in appropriate shipping container. Respiratory specimens should be received within 24 hours of collection.

Causes for Rejection: Sputum specimens greater than 24 hours old, specimens grossly contaminated with saliva.

Interpretation: Non-dermal specimens: Sender will be notified if significant structures are observed on direct exam. Telephone contact is made with sender if an isolate is suspected of being a systemic fungus.

CPT Code: Skin Culture 87101; Other Culture 87102; Blood Culture 87103; Identification 87106

FUNGAL CULTURE, REFERRED ISOLATE FOR IDENTIFICATION

Synonyms: Mycology, Fungus, Mold Isolates, Yeast Isolates, Aerobic Actinomycete Isolates

Test Section: Mycology, 803-896-0961

Days Test Performed: Monday - Friday

Request Form: DHEC 1333 Test #30200

Special Instructions: Include patient's name, collection date, and date isolate was transferred. Notify lab by phone if possible systemic mycosis. Indicate on form if isolate grows on mycobiotic medium. Pure isolate is preferred.

Container: Slants or culture flask will be accepted. Both must be sealed with parafilm or masking tape. Package in appropriate shipping container. **Plates will not be accepted.**

Storage/Shipping: Maintain at room temperature

Causes for Rejection: Name on request slip does not match name on isolate

Interpretation: Sender is notified by phone if systemic mold is suspected. A written report is sent as soon as isolate is identified.

CPT Code: 87106

FUNGAL DIRECT FA - Contact Laboratory for information- 803-896-0961

GALACTOSEMIA - See "Newborn Screening"

GC CULTURE - See "Gonococcal Culture"

GERMAN MEASLES - See "Rubella"

GIARDIA - See "Trichrome Stain" or "Parasite Examination"; General (O and P)

GIEMSA STAIN - See "Malaria Smear"

GONOCOCCAL (GC) ANTIGEN DETECTION

Synonyms: Gen-Probe GC, GC antigen, gonococcal antigen.

Test Section: Diagnostic Serology, 803-896-0811

Days Test Performed: Monday-Friday

Request Form: DHEC 1325B Test #50701-GC only; Test #50700 - GC and Chlamydia

Specimen: Endocervical or male urethral Gen-Probe swab in Gen-Probe Transport Media. Only use Gen-Probe Pace Specimen Collection Kit materials. [See GC/Chlamydia Gen-probe collection procedure](#). Vaginal samples will be tested but reported with a disclaimer.

Storage/Shipping: Room temperature. Specimen must arrive at lab within 7 days of collection.

Causes for Rejection: Specimens from nongenital sites will be rejected. This test is not appropriate in cases of sexual assault or abuse. Improperly collected specimens and those received more than 7 days after being collected will not be tested. Patients twelve years old and younger should be tested by culture.

Methodology: Nucleic acid hybridization and detection by chemiluminescence.

CPT Code: 97590 GC only. Use 87490 and 97590 for combination test.

GONOCOCCAL (GONORRHEA) CULTURE

Synonyms: Gonococcal culture, GC culture, *Neisseria gonorrhoeae* culture

Test Section: Bacteriology/Parasitology, 803-896-0805

Days Test Performed: Monday - Friday

Request Form: 1325 Test [#50100](#)

Specimen: [See *N.gonorrhoea* collection procedures](#). Eye cultures-obtain swab of conjunctival exudate

Cervical-Insert sterile cotton-tipped swab into endocervical canal; rotate and remove.

Rectal-Insert cotton-tipped swab one inch into anal canal, rotate and remove. If swab is contaminated with feces, discard and use another swab to repeat.

Urethral-Gently insert sterile loop or swab into urethra. Collect at least one hour after urinating. If making slides, collect two swabs or use one side of swab for culture and the other side for the slide.

Container: Transgrow bottles. Bring bottle to room temperature before inoculating: hold bottle upright and roll swab over entire surface of medium; discard swab. Recap bottle tightly, label with patient name, sender and date collected. DO NOT PLACE LABEL ON CLEAR SIDE OF BOTTLE.

GONORRHEA CULTURE CONT

Storage/Shipping: Incubate inoculated bottle upright for 24-48 hours at 35E C. Indicate incubation time on **Request Form**. If state courier is used, cultures collected on Friday may be shipped on Friday and marked as not incubated. **DO NOT REFRIGERATE AFTER INOCULATION**. Do not use expired media.

Causes for Rejection: Broken in transit, media expired, unlabeled specimen

Methodology: Carbohydrate fermentation or enzyme detection

CPT Code: 87077

GONORRHEA SMEAR

Synonyms: GC smear

Test Section: Bacteriology/Parasitology, 803-896-0805

Days Test Performed: Monday - Friday

Request Form: Bacteriology; 1325B Test #50300

Special Instructions: Do not spray with fixatives

Specimen: Slides of urethral discharge

Causes for Rejection: Broken in transit; unlabeled specimen

Methodology: Gram stain

CPT Code: 87205

GROUP A STREPTOCOCCUS - See Beta-Strep culture, group A.

GROUP B STREPTOCOCCUS -See Beta-Strep culture, group B.

HANTAVIRUS SEROLOGY- IgG/IgM

Test Section: Virology, 803-896-0819

Days Test Performed: As needed

Request Form: Use Viral serology form # 1301 and write test in blank space

Special Instructions: Call prior to sending specimen

Specimen & Volume : 2 ml serum

Causes for Rejection: Broken in transit; unlabeled specimen

Methodology:EIA

CPT Code: 86790

HEAVY METAL ANALYSIS - See individual metals.

HEMOGLOBIN (Hb) ELECTROPHORESIS

Synonyms: Sickie Cell screen

Test Section: Newborn Screening, 803-896-0874

Days Test Performed: Monday - Friday

Request Form: DHEC #1327, Test #90005

Special Instructions: [See heel-stick specimen collection procedure.](#)

Specimen: Blood spots or EDTA whole blood

Volume: 4 filled circles or 2 ml whole blood

Container: Filter paper or purple top vacuum tube

Causes for Rejection: Insufficient quantity, denatured, specimen more than one month old, transfused

Methodology: Iso Electric Focusing (IEF); High Performance Liquid Chromatography (HPLC)

CPT Code: 83020

HEMOLYTIC ANEMIA - See "Hemoglobin Electrophoresis"

HEPATITIS A SEROLOGY

Synonyms: HAV IgG and HAV IgM

Test Section: Diagnostic Serology, 803-896-0811

Days Test Performed: Available upon request See Special Instructions below.

Request Form: DHEC 1359; Test # 3500- IgG Write-in test name if not shown on form.
Test # 3600- IgM Write in test name if not shown on form

Special Instructions: HAV total antibody testing will be performed on all patients received for screening, with follow-up on all positive patients with Hepatitis A IgM. If patient is suspected of having Hepatitis A and is not involved in an outbreak, request Hepatitis A IgM and total antibody. All Hepatitis A outbreak investigations should be reported to the laboratory supervisor (803-896-0811) or Division Director (803-896-0965) prior to shipment of specimens.

Type of Specimen: Whole clotted blood or serum or plasma.

Volume: 0.5 ml blood or 0.25 ml serum or plasma. [See Venipuncture procedure.](#)

Container: Red top vacuum tube preferred.

Causes for Rejection: Improperly stored/shipped or contaminated specimens

Methodology: EIA

Interpretation: A positive HAV IgG antibody result indicates a past or current HAV infection. A positive HAV IgM antibody indicates an acute HAV infection, one that is usually accompanied by clinical symptoms of acute hepatitis. The clinical symptoms of HAV may precede the laboratory detection of HAV IgM by a few days.

Storage/Shipping: Store/ship specimen at 2-8°C so as to arrive at lab within 5 days of collection. Beyond 5 days of collection, store/ship serum or plasma at -20°C.

CPT Code: 86708-IgG; 86709-IgM

HEPATITIS B CORE TOTAL ANTIBODY SCREEN

Synonyms: Anti-HBc

Test Section: Diagnostic Serology, 803-896-0811

Days Test Performed: Monday - Thursday

Request Form: 1359 Test #22600

Special Instructions: See [venipuncture procedure if needed](#).

Specimen & Volume: 1 ml whole clotted blood, or 0.5 ml serum or plasma.

Container: Red top vacuum tubes are preferred.

Methodology: EIA

Storage/Shipping: Store/ship specimen at 2-8°C so as to arrive at lab within 5 days of collection. Beyond 5 days of collection, store/ship serum or plasma at -20°C.

CPT Code: 86704

HEPATITIS B DIAGNOSTIC PROFILE

Test Section: Diagnostic Serology, 803-896-0811

Days Test Performed: Monday - Thursday

Request Form: 1359 Test #22300

Special Instructions: None. See [venipuncture procedure if needed](#).

Specimen & Volume: 4 ml Whole clotted blood or 2 ml serum or plasma.

Container: Red top vacuum tube is preferred.

Causes for Rejection: Improperly stored/shipped or contaminated specimens will not be tested.

Use: Includes tests for HBsAg, anti-HBs, and anti-HBc. HBeAg and anti-HBe are performed if indicated.

Methodology: EIA

Interpretations:

HBsAg	anti-HBs	anti-HBc total antibody	Interpretation
!	!	!	No laboratory evidence of HBV infection. Does not rule-out low level HBV carrier state, or the window between the disappearance of HBsAg and the appearance of anti-HBs and anti-HBc IgG.
+	!	!	Early acute HBV infection.
+	"	+	HBV infection, either acute or chronic. Differentiate with anti-HBc IgM.
!	+	+	Previous HBV infection and immunity to HBV.
!	+	!	Vaccine-type response indicating immunity to HBV.

HEPATITIS B DIAGNOSTIC PROFILE CONT

Storage/Shipping: Store/ship specimen at 2-8°C so as to arrive at lab within 5 days of collection. Beyond 5 days of collection, store/ship serum or plasma at -20°C.

CPT Code: 87340 surface antigen; 86706 surface antibody; 86704 core antibody; 87350 E antigen; 86707 E antibody

HEPATITIS B CORE IgM ANTIBODY

Synonyms: Anti-HBc IgM

Test Section: Diagnostic Serology, 803-896-0811

Days Test Performed: Available upon request. See special instructions below.

Request Form: DHEC 1359; Test # 3700 Write-in test name if not printed on form.

Special Instructions: Consultation between the requesting physician or district Medical Director and the laboratory supervisor or Division Director is required prior to specimen testing.

Specimen & Volume : 0.5 ml whole clotted blood or 0.25 ml serum or plasma

Container: Red top vacuum tube preferred. [See venipuncture procedure if needed.](#)

Causes for Rejection: Specimen will not be tested without prior consultation (See Special Instructions above). Improperly stored/shipped or contaminated specimens will not be tested.

Methodology: EIA

Interpretation: A positive Anti-HBc IgM result in conjunction with a positive hepatitis B surface antigen result indicates an early acute HBV infection. Store and ship specimen at 2-8°C so as to arrive at lab within 5 days of collection. Beyond 5 days of collection, store/ship serum or plasma at -20°C.

CPT Code: 86705

HEPATITIS B IMMUNE STATUS/POST-IMMUNIZATION

Test Section: Diagnostic Serology, 803-896-0811

Days Test Performed: Monday - Thursday

Request Form: 1359 Test #22200

Special Instructions: None

Specimen & Volume : 2 ml Whole clotted blood, 1 ml serum or plasma.

Container: Red top vacuum tube is preferred. [See venipuncture procedure.](#)

Causes for Rejection: Improperly stored/shipped or contaminated specimens will not be tested.

Methodology: EIA

Storage/Shipping: Store/ship specimen at 2-8°C so as to arrive at lab within 5 days of collection. Beyond 5 days of collection, store/ship serum or plasma at -20°C.

CPT Code: 86706 surface antibody; 86704 core antibody

HEPATITIS B SURFACE ANTIGEN

Test Section: Diagnostic Serology, 803-896-0811

Days Test Performed: Monday - Thursday

Request Form: 1359 Test #22501

Specimen & Volume: 1 ml whole clotted blood, or 1 ml serum or plasma.

Container: Red top vacuum tube is preferred. [See venipuncture procedure.](#)

Causes for Rejection: Improperly stored/shipped or contaminated specimens will not be tested.

Methodology: EIA

Storage/Shipping: Store/ship specimen at 2-8°C so as to arrive at lab within 5 days of collection. Beyond 5 days of collection, store/ship serum or plasma at -20°C.

CPT Code: 87340

HEPATITIS C SEROLOGY

Synonyms: HCV IgG, HCV total antibody.

Test Section: Diagnostic Serology, 803-896-0811

Days Test Performed: Monday-Friday for workplace exposure. Routinely batched twice a week.

Request Form: DHEC 1359; Test # 3800 Write-in test name if not printed on form.

Specimen & Volume : 0.5 ml whole clotted blood, or 0.250 ml serum or plasma.

Container: Red top vacuum tube preferred. [See venipuncture procedure if needed.](#)

Causes for Rejection: Improperly stored/shipped or contaminated specimens will not be tested.

Methodology: EIA

Interpretation: A positive HCV total antibody result indicates a past or current HCV infection.

All positive HCV results are repeated in duplicate by EIA and sent to the Centers for Disease Control (CDC) for confirmation.

Storage/Shipping: Store/ship specimen at 2-8°C so as to arrive at lab within 10 days of collection. Beyond 5 days of collection, store/ship serum or plasma at -20°C.

CPT Code: 86803

HEPATITIS PRENATAL SCREEN - See "Hepatitis B Surface Antigen."

HERPES SIMPLEX CULTURE

Synonyms: Herpes Virus Culture

Test Section: Virology, 803-896-0819

Days Test Performed: Monday - Friday

Request Form: 1337 (new form); Test #25000

Special Instructions: [See viral culture collection for *H. Simplex*.](#)

Specimen: Throat washing, CSF, Cervical/vaginal swabs, N-P swab, tissue, surface lesions, etc.

Container: Viral transport containers (2 ml size) provided upon request

HERPES CULTURE CONT

Storage/Shipping: Ship cold within 24 - 48 hours or pack in dry ice.

CPT Code: 87252 culture; 87253 ID

HERPES SEROLOGY TYPE I AND TYPE II

Synonyms: Herpes virus

Test Section: Virology, 803-896-0819

Days Test Performed: Weekly

Request Form: DHEC 1301 Test #10900 Immune status (single specimen), Test #13600 diagnostic (paired sera)

Special Instructions: Acute and convalescent specimens required for diagnosis, Specimens should be taken at least 2 weeks apart.

Specimen & Volume: 5 ml whole clotted blood or 2 ml serum

Container: Red top vacuum tube. [See venipuncture procedure if needed.](#)

Methodology: EIA

Interpretation: Immune Status: Positive, negative or equivocal; diagnostic results are positive, negative or equivocal with comment attached when needed indicating current infection.

CPT Code: Type I-86695; Type II-86696

HISTOPLASMA CAPSULATUM CULTURE- See ~~A~~Fungal Culture@

HIV-1 PCR QUALITATIVE (DNA)

Synonyms: HIV-1 Proviral DNA Detection

Test Section: Diagnostic Serology, 803-896-0825

Days Test Performed: Weekly

Request Form: 1359 Test #4000

Specimen and Volume: **Infants < 18 months old:** Collect whole blood in an EDTA pediatric tube or a heel stick microtainer with EDTA anticoagulant (BD Brand # 365974) A minimum specimen volume of 0.3 ml is required for testing. **Infants\$18 months old and adults:** Collect 1.5-2.0 ml EDTA Anticoagulated whole blood, (lavender/purple top vacuum tube).

Container: EDTA tube or EDTA Heel stick microtainer, BD brand # 365974.

Storage/Shipping: Store/ship specimen at 2-25°C so as to arrive at lab within 3 days of collection. Ship using cold packs during summer time. Do not freeze the specimen.

Causes for Rejection: Improperly collected, improperly stored/shipped, or contaminated specimens will not be tested.

Use: a. Patient is an infant whose mother is anti-HIV-1 positive, or
b. Patient is an adult whose anti-HIV-1 tests, i.e., EIA and/or Western Blot, have shown indeterminate or conflicting results.

Methodology: PCR with EIA detection.

Interpretation: Positive or Negative

CPT Code: 87535

HIV-1 PCR QUANTITATIVE (RNA)

Synonyms: HIV-1 Viral Load test.

Test Section: Diagnostic Serology, 803-896-0811

Days Test Performed: Weekly

Request Form: 1359 Test #4100

Specimen and volume: 1.5 to 2.0 ml plasma. [See venipuncture procedure if needed.](#)

Collect blood in an EDTA vacutainer (lavender/purple top) or PPT vacutainer. Separate the plasma from the packed cells within 2 hours of collection by centrifugation for 20 minutes at room temperature. If using EDTA vacutainer, remove the plasma from the cells using a sterile transfer pipette to a sterile polypropylene transport tube. The PPT separator tube can be shipped after centrifugation without transferring plasma to another tube **Note:** Remove as much of the plasma from the cells as possible without aspirating cells. **The assay requires 1.0 ml of plasma.**

Container: PPT vacutainer supplied by the Bureau of Laboratories. Call 803-896-0913 to order. An EDTA vacutainer may also be used if plasma is removed from cells within 2 hours of collection, and transferred to a polypropylene tube

Storage/Shipping: Store/ship plasma specimen with a **cold pack (2-25°C)** to arrive at the lab the day after collection..

Causes for Rejection: Improperly collected, improperly stored/shipped, or contaminated specimens

Use: Therapeutic monitoring of HIV infection.

Methodology: Branched DNA (bDNA) Nucleic Acid Hybridization with PCR amplification.

Interpretation: The measurable reportable range for this procedure is 50-500,000 copies/ml plasma. Specimens testing within this range will be reported as the measured number and (in parentheses) as the log 10 value of the measured copy number e.g. 30,000 copies (4.48log 10).The log 10 value will be rounded to the nearest second decimal place. A 0.5 log 10 increase or decrease in the copy number when compared to the patient's previous viral load result is regarded as a significant change.

Specimens testing above 500,000 will be reported as > 500,000 copies/ ml plasma.

Specimens testing below 50 copies/ml plasma will be reported as No HIV-1 RNA detected, less than 50 copies/ ml plasma.@

CPT Code: 87536

HIV-1 SEROLOGY

Test Section: Diagnostic Serology, 803-896-0811

Days Test Performed: Monday - Friday

Request Form: 1359 Test #23000, #23001 (EIA), #23002 (Western Blot)

Special Instructions: None

Specimen:& Volume: 1 ml serum or plasma.

Container: Red top vacuum tube is preferred. [See venipuncture procedure if needed.](#)

Causes for Rejection: Improperly stored/shipped, or grossly hemolyzed, or contaminated samples.

Methodology: Enzyme Immunoassay (EIA), Western Blot

Interpretation: Repeat reactive specimens are confirmed by Western Blot. Recommend repeat testing on all first-time positive patient results including CD4 and Viral load (HIV-1RNA).

HIV-1 SEROLOGY CONT

Storage/Shipping: Store/ship specimen at 2-8°C so as to arrive at lab within 5 days of collection. Beyond 5 days of collection, store/ship serum or plasma at -20°C.

CPT Code: 86701 for EIA; 86689 for Western Blot

HIV-1 SEROLOGY using Dried Blood Spots

Test Section: Diagnostic Serology, 803-896-0811

Days Test Performed: Monday - Friday

Request Form: DHEC 1327

Special Instructions: [See capillary blood collection by fingerstick procedure.](#)

Specimen: Dried Blood spot

Volume: Fill all filter paper circles with blood

Container: Filter paper attached to requisition form.

Causes for Rejection: Insufficient quantity, scratched and abraded spots, contaminated, layered or supersaturated spots.

Methodology: Enzyme Immunoassay (EIA), Western Blot

Interpretation: Repeat reactive specimens are confirmed by Western Blot. Recommend repeat testing on all first-time positive results.

Storage/Shipping: Store/ship specimen at 2-8°C. Ship within 24 hours after collection and drying.

CPT Code: 86701 for EIA; 86689 for Western Blot

HIV-1 SEROLOGICAL MONITORING- See *ALymphocyte Subset@*

HOOKWORM - See *AParasite Examination@*

HYPOTHYROIDISM - See "T4" for non-neonatal; see "Newborn Screening" for neonatal

INFLUENZA VIRUS CULTURE

Synonyms: Also included in respiratory culture battery

Test Section: Virology, 803-896-0819

Days Test Performed: Monday- Friday

Request Form: 1337 Test #27100

Special Instructions: Collect swab (do not use alginate swab) and place in transport media. Refrigerate until shipped. Do not allow patient to gargle medium which contains penicillin.

Specimen: Throat or nasopharyngeal swab. [See viral culture collection.](#)

Container: Influenza transport media (which is kept refrigerated), mailing containers and instructions provided during flu season.

Use: Submitted on patients with symptoms compatible with influenza.

CPT Code: Tissue Culture, 87252; Identification 87253

INFLUENZA VIRUS A AND B SEROLOGY

Synonyms: Test also included in Respiratory Serology Battery

Test Section: Virology, 803-896-0819

Days Test Performed: monthly

Request Form: 1301 Test #10100, #10106 (INF A), #10107 (INF B)

Special Instructions: Acute and convalescent specimens required, 2 weeks between specimens

Specimen: Whole clotted blood or serum. [See venipuncture procedure if needed.](#)

Volume: 5 ml blood or 2 ml serum

Container: Red top vacuum tube

Methodology: CF

CPT Code: 86171 each titer

INFLUENZA SURVEILLANCE

From October to April of each year, the Bureau of Laboratories participates in the World Health Organization's (WHO) Influenza Surveillance Program. Collection kits are provided and there is no charge if submitting throat swabs for the surveillance. Contact the Virology Lab for more information at 803-896-0819.

LEAD ANALYSIS, BLOOD

Test Section: Special Chemistry, 803-896-0885

Days Test Performed: Monday - Friday

Request Form: 1311 Test #85200

Specimen: EDTA whole blood (venous preferred) [See venipuncture procedure if needed.](#)

Volume: Minimum acceptable volume is 3 ml for venipuncture; 200 µL for finger sticks

Container: 3 ml or 7 ml purple vacuum tube

Causes for Rejection: Insufficient quantity, clotted specimens

Methodology: Graphite Furnace Atomic Absorption

Interpretation: Reference Value: <10 µg/dL for children

CPT Code: 83655

LEAD ANALYSIS, ENVIRONMENTAL SAMPLES

Test Section: Special Chemistry, 803-896-0885

Days Test Performed: Weekly

Request Form: 1311 Test #85400

Specimen: Paint chips, soil, water

Volume: Minimum 1 teaspoon paint, 2 teaspoons soil, 100 ml water

Container: Zip-lock bag; container for water; acid washed sample container

Causes for Rejection: Insufficient quantity

Methodology: Atomic absorption

CPT Code: None

LEAD ANALYSIS, URINE

Test Section: Special Chemistry, 803-896-0885

Days Test Performed: Monday-Friday

Request Form: 1311 Test #85300

Special Instructions: Accepted on Chelation Therapy patients only

Specimen& Volume: 50 ml of 24 hour collection of Urine

Container: Urine sample container

Methodology: Atomic Absorption

CPT Code: 83655

LEGIONELLA CULTURE

Synonyms: Legionnaire's disease; Legionella culture

Test Section: Bacteriology/Parasitology, 803-896-0805

Days Test Performed: Monday - Friday

Request Form: 1345 Test #51000

LEGIONELLA CULTURE, CONT

Specimen: Sputum, Bronchial washing, pleural fluid, lung tissue, other body fluids, abscesses, bacterial isolates. Note: urine antigen test is not available at the Bureau of Laboratories.

Volume: 1-2 ml for culture

Container: Sterile leak-proof container

Storage/Shipping: For arrival within 48 hours, ship on cold pack. Freeze and ship on dry ice for arrival after 48 hours.

Causes for Rejection: Specimen too old or warm on arrival or quantity not sufficient; unlabeled specimen

Methodology: Conventional culture and biochemical methods

CPT Code: Culture - 87070

LEGIONELLA FA

Test Section: Bacteriology/Parasitology, 803-896-0805

Days Test Performed: Monday - Friday

Request Form: 1345 Test #51300

Specimen: Fresh lung tissue imprints; scrapings of formalin fixed tissue or lower respiratory tract fluids - sputum; TTA; bronchial washing; pleural fluid, culture isolates, smears on slides (submit at least 2 separate slides).

Note: FA Test is screening only. Legionella culture is recommended and test #510 will be performed on all specimens for FA that are appropriate for culture.

Container: Sterile leak-proof container or crush proof slide holder.

Causes for Rejection: Specimen leaked or broken in transit; improper labeling

Methodology: FA Stain

CPT Code: 87206

LEGIONELLA SEROLOGY

Test Section: Virology, 803-896-0819

Days Test Performed: Weekly

Request Form: 1301 Test #2301

Special Instructions: Paired specimens required and should be taken 3-4 weeks apart.

Specimen & Volume: 5 ml whole clotted blood or 2 ml serum

Container: Red top vacuum tube. [See venipuncture procedure if needed.](#)

Methodology: IFA

Interpretation: Titer of 1:256 on single specimen indicates infection at undetermined time. Four-fold increase to 1:128 or greater on paired sera indicates recent infection.

CPT Code: 86256

LEISHMANIASIS - See "Parasite Serology"

LEPTOSPIROSIS

Test Section: CDC Leptospira Lab 404-639-3905

Days Test Performed: Referred to CDC

Request Form: CDC form

Special Instructions: Blood specimens should be collected during the first week of symptoms.

After the first week of symptoms, collect a mid-stream, clean catch urine specimen.

Five (5) tubes of PLM media should be requested from CDC prior to sample collection.

Specimen: Collect blood in heparin tube. Collect urine in clean container. Inoculate immediately. Put two (2) drops of blood or urine in each tube of medium. Avoid agitation of the blood sample because free hemoglobin kills Leptospira.

Volume: 1 ml of heparinized blood or clean catch urine

Storage/Shipping: Transport at room temperature in double walled leak-proof container

Note: Serology test is more sensitive and has a shorter turnaround time

CPT Code: 87040 (blood); 87088 (urine)

LYME DISEASE

Synonyms: Borrelia Antibodies

Test Section: Virology, 803-896-0819

Days Test Performed: Weekly

Request Form: Test #

Specimen & Volume: 5 ml whole blood or 2 ml. Serum

Container: red- top vacutainer. [See venipuncture procedure if needed.](#)

Methodology: EIA

Interpretation: All positive EIA results are confirmed by western blot.

CPT Code: 86618

LYMPHOCYTE SUBSET

Synonyms: CD4; T4 lymphocytes

Test Section: Hematology, 803-896-0954

Days Test Performed: Monday - Friday

Request Form: DHEC 1387 Test #78000

Special Instructions: Specimen must be less than 30 hours old when tested by laboratory

Specimen & volume: 3-7 ml whole blood in EDTA, mix well but gently.

Container: (EDTA) vacuum tube. [See venipuncture procedure if needed.](#)

Storage/Shipping: DO NOT REFRIGERATE

Causes for Rejection: Specimen too old, specimen clotted, QNS, specimen received cold or frozen.

LYMPHOCYTE SUBSET, CONT

Use: To evaluate HIV status

Interpretation: Reference value: CD4 cells 34-59%, CD4/CD8 ratio 0.9-3.1, results highly variable during progression of disease

Note: Lymphocyte subset includes CBC results

Methodology: Laser flow cytometry

CPT Code: 86359, 86360, 88180

LYMPHOCYTIC CHORIOMENINGITIS SEROLOGY

Synonyms: LCM

Test Section: Virology, 803-896-0819

Days Test Performed: Monthly

Request Form: 1301 Test #11800

Special Instructions: Paired sera - 2 to 4 weeks apart

Specimen: Serum or CSF (if CSF is sent, please include serum)

Volume: 1 ml. [See venipuncture procedure if needed.](#)

Methodology: Complement fixation

Interpretation: A 4-fold or greater rise in CF titer (e.g., from 1:8 to 1:16, or from 1:32 to 1:128) between the acute and convalescent serum specimens is considered diagnostically significant. A titer of < 1:8 (or < 1:2) means negative at that dilution.

CPT Code: 86171

MALARIA SMEAR

Synonyms: Giemsa Stain; Blood Parasite

Test Section: Bacteriology/ Parasitology 803-896-0804

Days Test Performed: Monday - Friday

Request Form: 1334 Test #40400

Special Instructions: Submit 2 - 3 thick and thin blood smears. Blood smears must be prepared immediately after collection.

Specimen: Blood (Capillary or EDTA Venous Blood)

Rejection Criteria: Clotted blood, EDTA venous blood > 1 hr old; Blood smears > 3 days old

Storage/Shipping: Room temperature/double-walled mailing container

Use: To detect blood parasites such as: malaria, microfilaria

Methodology: Giemsa stain-microscopic examination

CPT Code: 87207

MCADD - Medium chain Acyl Co-A Dehydrogenase Deficiency - See Newborn Screening

MEASLES (RUBEOLA) SEROLOGY IMMUNE STATUS

Synonyms: Measles IgG

Test Section: Virology, 803-896-0819

Days Test Performed: Weekly

Request Form: 1301 Test #13200

Specimen & Volume : 5 ml whole clotted blood or 2 ml serum

Container: Red top vacuum tube. [See venipuncture procedure if needed.](#)

Use: To determine immune status of patient

Methodology: EIA

CPT Code: 86765

MEASLES (RUBEOLA) SEROLOGY DIAGNOSIS (IgM)

Synonyms: Measles IgM

Test Section: Virology, 803-896-0819

Days Test Performed: weekly

Request Form: 1301 Test #11100 (specify IgM if test number not on form)

Special Instructions: Call Virology, 896-0819 prior to sending specimen

Specimen & Volume : 5 ml whole clotted blood or 2 ml serum

Container: Red top vacuum tube. [See venipuncture procedure if needed.](#)

Use: Diagnosis of measles and used during possible outbreaks. IgM antibodies usually appear 3-5 days after onset of rash.

Methodology: EIA

CPT Code: 86765

MHA-TP (TP-PA)

Synonyms: *Treponema pallidum* particle Agglutination; detection of antibodies to *T. pallidum*

Test Section: Diagnostic Serology, 803-896-0811

Days Test Performed: Weekly

Request Form: 1359 or 1336 Test #201

Special Instructions: None.

Specimen & Volume: 4 ml whole clotted blood or 2 ml serum

Container: Red top vacuum tube. [See venipuncture procedure if needed.](#)

Causes for Rejection: Improperly stored/shipped, or grossly hemolyzed. or contaminated specimens will not be tested.

Use: To determine the stage of infection. Not a screening test.

Methodology: Qualitative gelatin particle agglutination assay

Storage/Shipping: Store/ship specimen at 2-8°C so as to arrive at the lab within 3 days of collection.

Interpretation: Reactive test is usually reactive for life (85% of cases).

CPT Code: 86592

MICROSPORIDIUM STAIN

Synonyms: Chromotrope 2R Stain for microsporidium, Enterocytozoan Stain

Test Section: Bacteriology/Parasitology, 803-896-0805

Days Test Performed: Monday - Friday, as requested

Request Form: Parasitology 1334 Test #41400

Special Instructions: Do not concentrate specimen.

Specimen: Fresh stool less than 1 hour old preserved in 10% formalin; duodenal aspirates in 10% formalin; urine sediment, nasal smears, sputum, corneal scrapings.

Volume: 1 ml or slides (please submit at least 2 thin smears)

Container: Screw-capped leak proof container/tube

Storage/Shipping: room temperature; double walled crush-proof mailer

Causes for Rejection: PVA preserved stool, plastic-embedded tissues, paraffin-embedded tissues

Use: Diagnosis of Microsporidian infection

Methodology: Chromotrope 2R Stain/light microscopy to detect Microsporidia spores.

CPT Code: 87207

MITES - See AScabies@

MOLD CULTURE - See "Fungal Culture"

MUMPS VIRUS CULTURE

Test Section: Virology, 803-896-0819

Days Test Performed: Monday - Friday

Request Form: 1337 Test #27000

Special Instructions: Refrigerate immediately upon collection

Specimen: Throat swab, urine, CSF

Container: Throat wash media provided on request. [See viral culture collection procedures.](#)

Storage/Shipping: Ship COLD within 24 - 48 hours, or freeze and ship on dry ice.

CPT Code: Culture, 87252; Identification 87253

MUMPS VIRUS SEROLOGY

Test Section: Virology, 803-896-0819

Days Test Performed:

Weekly

Request Form: 1301 Test #13500 Immune status (single specimen) #13800 Diagnostic (paired specimens)

Special Instructions: acute and convalescent specimens required, 2 weeks between specimens for diagnostic

Specimen: Whole clotted blood

Volume: 2 ml blood or 1 ml serum. [See venipuncture procedure if needed.](#)

Container: Red top vacuum tube.

Methodology: EIA

Interpretation: Immune status: Positive, negative or equivocal; diagnostic results are positive, negative or equivocal with comment attached when needed indicating current infection.

CPT Code: 86171

MURINE TYPHUS SEROLOGY - See "Rickettsial Serology"

MYCOBACTERIAL CULTURE, BLOOD

Test Section: Mycobacteriology (TB), 803-896-0828

Days Test Performed: Monday-Friday

Request Form: 1306 Test #60100

Specimen: Whole Blood. [See venipuncture procedure if needed.](#)

Volume: 4 - 5 ml

Container: MB/BacT Vial (Call Lab for container, 896-0828)

Special Instructions: (1) Clean septum of MB vial with 70% alcohol;
(2) Use good aseptic technique to cleanse arm; (3) Aseptically draw 4 to 5 ml blood and inject into MB vial
(4) Clean top of vial with 70% alcohol, cover top with tape and mail in double mailer provided.

Storage/Shipping: Refrigerate if shipping is delayed over 24 hours

MYCOBACTERIAL CULTURE, BLOOD, CONT

Causes for Rejection: Insufficient amount (< 1 ml), leakage, no name on specimen, no request form. Specimen too old (>5 days).

Methodology: BacT Alert system , HPLC, Gen-Probe

CPT Code: 87118(identification) + 87149 Gen-Probe and 87143- HPLC

MYCOBACTERIAL CULTURE, Other than Blood

Synonyms: AFB, TB

Test Section: Mycobacteriology (TB), 803-896-0828

Days Test Performed: Monday - Friday

Request Form: 1306 Test #60100

Specimen: Sputum, gastric washings, body fluids, other. See [mycobacterium culture collection procedure](#).

Volume: 5 - 10 ml for Sputum and Gastric Washing. See chart ii-43 for other specimens.

Container: 50 ml tube supplied with double mailing container

CPT Code: 87015 for conc; 87116 for culture; for ID, use 87149 -Gen-Probe & 87143- HPLC

MYCOBACTERIAL CULTURE, REFERRED FOR IDENTIFICATION

Synonyms: AFB, TB

Test Section: Mycobacteriology (TB), 803-896-0828

Days Test Performed: Monday - Friday

Request Form: 1306 Test #60200

Special Instructions: Send only pure cultures with sufficient growth to perform tests

Container: LJ slant, double mailing container

Causes for Rejection: Contaminated culture, non-viable organism

Methodology: HPLC, Gen-Probe

CPT Code: 87149 -GenProbe and 87143- HPLC

MYCOBACTERIA SUSCEPTIBILITY

Synonyms: Sensitivity Test

Test Section: Mycobacteriology (TB), 803-896-0828

Days Test Performed: Weekly on new TB isolates only and by request on previously positive patients.

Request Form: 1306 Test #60400

Special Instructions: Call Laboratory for drugs other than INH, ethambutol, rifampin, streptomycin and pyrazinamide.

Methodology: Bactec, conventional

CPT Code: 87184

MYCOPLASMA/ UREAPLASMA CULTURE (GENITAL)

Synonyms: *M. hominis* and Ureaplasma

Test Section: Virology, 803-896-0819

Days Test Performed: Monday-Friday

Request Form: 1337 Test #27200

Special Instructions: Please call Viral Isolation prior to sending, as special transport medium is required. [See mycoplasma/uroplasma culture collection procedure.](#)

Specimen: Vaginal swab, cervical swab, urethral swab, urine, endometrial washings, and placenta.

Storage/Shipping: If *M. hominis* is suspected, keep specimen at 4EC if will reach the laboratory within 6 hours. For longer periods of time, freeze at -70EC. If Ureaplasma is suspected, specimen can be kept at 4EC for 24-48 hours.

CPT Code: Culture, 87109; Identification, 87253

MYCOPLASMA PNEUMONIAE CULTURE (RESPIRATORY)

Synonyms: *Mycoplasma pneumoniae*

Test Section: Virology, 803-896-0819

Days Test Performed: Monday-Friday

Request Form: 1337 Test #27200

Specimen: Respiratory - use 5 ml viral transport medium to gargle or send bronchial washings.
[See viral respiratory culture collection procedure.](#)

Storage/Shipping: Please send cold within 24-48 hours after collection. Refer to page II-25.

CPT Code: Culture, 87109; Identification, 87253

MYCOPLASMA SEROLOGY

Synonyms: Respiratory Serology

Test Section: Virology, 803-896-0819

Days Test Performed: Monthly

Request Form: 1301 Test #10400

Special Instructions: acute and convalescent specimens required, 2 weeks between specimens

Specimen: Whole clotted blood or serum

Volume: 2-3 ml blood 1-2 ml serum [See venipuncture procedure if needed.](#)

Container: Red top vacuum tube

Methodology: CF

Interpretation: A 4-fold or greater rise in CF titer (e.g., from < 1:8 to 1:16, or from 1:32 to 1:128) between the acute and convalescent serum specimens is considered diagnostically significant. A titer of < 1:8 (or < 1:2) means negative at that dilution.

CPT Code: 86171

NAEGLERIA CULTURE - See "Amoebae Culture"

NEWBORN SCREENING

Synonyms: No synonyms. Tests include: Phenylketonuria (PKU), Galactosemia (GAL), T4 and TSH for Congenital Hypothyroidism (CH), Congenital Adrenal Hyperplasia (CAH), Hemoglobinopathies (Sickle variants, etc.) & Medium Chain Acyl-Co-A Dehydrogenase Deficiency (MCADD).

Test Section: Newborn Screening, 803-896-0874

Days Test Performed: Monday - Friday

Request Form: 1327

Special Instructions: [See capillary blood collection by heel stick.](#)

Specimen: Dried blood spots

Volume: Fill all filter paper circles on request form

Container: Filter paper and mailing envelope

Storage/Shipping: Place dried filter paper in preaddressed mailing envelope provided and ship by first class mail within 24 hours after collection.

Causes for Rejection: Insufficient quantity, scratched and abraded, contaminated, layered, supersaturated

Methodology: PKU and GAL - Fluorometric Analysis; T4, TSH and CAH -FIA;; Hemoglobinopathies - Isoelectric Focusing (IEF), HPLC ; MCADD, Tandem Mass spectrophotometry

Interpretation: All results will be reported to the hospital, clinic, or institution and the attending physician (2 separate copies). PKU, GAL, CAH, and CH and MCADD are reported as within normal limits or outside normal limits unless otherwise noted. In addition, acylcarnitine levels are reported for MCADD. Hemoglobins will be reported out as normal or with the appropriate hemoglobinopathy identified.

1. Phenylketonuria Screen:

If phenylalanine level is outside normal limits, a quantitative result is given. Any specimen with a value greater than or equal to 4 mg/dL is considered outside normal limits. If the infant is diagnosed as having phenylketonuria, the infant should be provided a low phenylalanine diet. Repeat blood examinations can be performed as necessary to assist the physician in maintaining the phenylalanine level within prescribed limits.

2. Congenital Hypothyroid (CH) Screen:

All infants receive a T4 (Thyroxine) and a TSH (Thyroid Stimulating Hormone) screening test.. A T4 value of ≥ 7 Fg/dL is abnormal for infants ≤ 7 days old. A T4 value of ≥ 4 Fg/dL is abnormal for infants ≥ 8 days old. A TSH value of ≥ 20 FIU/mL is abnormal for all infants, regardless of age.

3. Congenital Adrenal Hyperplasia (CAH) Screen:

Patients with a present weight greater than or equal to 2500 grams and a 17-OH-progesterone value of 40 ng/ml or greater are reported as outside normal limits. Patients with a present weight less than 2500 grams and a 17-OH-progesterone value greater than 65 ng/ml are reported as outside normal limits.

NEWBORN SCREENING, CONT

4. Galactosemia (GAL) Screen:

If galactose level is outside normal limits, a quantitative result is given. Any specimen with a value greater than or equal to 10.0 mg/dL is considered outside normal limits. All abnormal specimens also are tested for the presence of the galactose-1-phosphate uridyl transferase (GALT) enzyme. The enzyme activity is reported as normal or deficient. Patients on soy

formula or less than 24 hrs old (if noted on the **Request Form**) will receive the GALT enzyme test.

5. Hemoglobinopathy (Hb) Screen:

Results are reported as normal hemoglobin (Hb FA or Hb AF) or as an interpretative diagnosis for abnormal Hemoglobins. (e.g. Hb FAS, FAC FS)

6. MCADD

Results are reported as within normal limits or outside normal limits. If all or any acyl Carnitines are outside (greater than the cutoff) normal limits, a quantitative result will be given and the abnormal cutoff levels will be given. The C6, C8, C10 and C10:1 carnitines, along with the C8/C10 ratio, must be elevated for the test to be reported as a positive screening for MCADD. Elevated levels of one or more, but not all, of the measured carnitines will be reported as May be indicative of a fatty acid oxidation disorder@

Note: Acylcarnitine levels drop precipitously over the first few weeks of life in both normal and affected infants, with affected infants values remaining in the abnormal range. A decrease in measured Acylcarnitine levels in an infant with MCADD over a period of time should not be interpreted as condition improvement. The infant has MCADD.

Abnormal carnitine cutoff levels

C6 (Hexanoyl carnitine) ≥ 0.62 uM

C8 (Octanoyl carnitine) ≥ 0.72 uM

C10 (Decanoyl carnitine) ≥ 0.45 uM

C10:1 (Decenoyl carnitine) ≥ 0.30 uM

C8/C10 ratio ≥ 3.0

7. Quantitations of Hb A2 and S (when whole blood is received):

Results are reported as a percentage of the total hemoglobin. Hb A2 percentage $\geq 3.5\%$ is reported as abnormal.

CPT CODES: -PKU-84030; T4-84437; TSH-84443; CAH-83516 MCADD-83789;
Galactosemia-82760; Hemoglobinopathies- 83020

OVA AND PARASITES EXAMINATION (O & P) - See "Parasite Examination, General"

PARAINFLUENZA VIRUS CULTURE

Synonyms: also included in respiratory culture battery

Test Section: Virology, 803-896-0819

Days Test Performed: Monday - Friday

Request Form: 1337 Test [#27000](#)

Specimen: Throat, N-P swab. [See culture collection for respiratory virus.](#)

Container: Viral transport media provided upon request

Storage/Shipping: Ship **COLD** within 24-48 hours or freeze specimen and ship on dry ice

CPT Code: Culture, 87252; Identification, 87253

PARAINFLUENZA VIRUS I, II, III SEROLOGY

Synonyms: also included in Respiratory serology battery

Test Section: Virology, 803-896-0819

Days Test Performed: Monthly

Request Form: 1301 Test [#10200](#), [#10201](#) (PARA I), [#10202](#) (PARA II), [#10203](#) (PARA III)

Special Instructions: Acute and convalescent specimens required, 2 weeks between specimen

Specimen & Volume : 5 ml whole clotted blood or 2 ml serum. [See venipuncture procedure if needed.](#)

Container: Red top vacuum tube

Methodology: CF

Interpretation: A 4-fold or greater rise in CF titer (e.g., from < 1:8 to 1:16, or from 1:32 to 1:128) between the acute and convalescent serum specimens is considered diagnostically significant. A titer of < 1:8 (or < 1:2) means negative at that dilution.

CPT Code: 86171

PARASITE EXAMINATION, GENERAL (O & P)

Test Section: Bacteriology/Parasitology, 803-896-0804

Days Test Performed: Monday - Friday

Request Form: 1334 Test [#40100](#)

Specimen: Stool, stool preserved in 10% formalin, SAF (sodium-acetate-acetic acid formalin), MIF (merthiolate-iodine-formalin) or PVA. [See collection procedure for O & P.](#)

Volume: "Walnut" size, or 2 tbsp liquid specimen (Note: Submit liquid or soft specimens in PVA for detection of trophozoites).

Container: Leak proof screw cap tube

Storage/Shipping: Double wall mailing container

Causes for Rejection: Insufficient quantity - liquid specimen less than 2 tbsp., contamination with urine or water, laxatives or barium; specimens covered in fungal growth; specimens that appear hard and desiccated; specimens more than 4 days old; improper labeling

Use: Detection of protozoan cysts, helminth eggs and larvae

Methodology: Concentration, microscopic exam

CPT Code: 87177

PARASITE EXAMINATION, BLOOD PARASITES - See "Malaria Smear"

PARASITE EXAMINATION, IDENTIFICATION OF PROGLOTTID OR WORM

Test Section: Bacteriology/Parasitology, 803-896-0804

Days Test Performed: Monday - Friday

Request Form: 1334 Test #40500

Special Instructions: Submit in 10% formalin or alcohol if formalin not available

Specimen: Proglottid or worm

Container: Leak-proof screw cap tube

Storage/Shipping: Double-wall mailing container

CPT Code: 87168

PARASITE EXAMINATION, PINWORM - See "Pinworm Exam"

PARASITE SEROLOGY

Referred to Centers for Disease Control for testing: Chagas disease, cysticercosis, echinococcosis, leishmaniasis, malaria, schistosomiasis, trichinosis, visceral larva migrans (Toxocara). toxoplasmosis. For additional information call 803-896-0805.

Request Form: CDC Specimen Referral Form 50.34 Rev. 8-84

Specimen: Whole clotted blood or serum. [See venipuncture procedure if needed.](#)

Volume: 2 ml

Container: Red top vacuum tube

PARVOVIRUS IgG/IgM SEROLOGY

Test Section: Virology, 803-896-0819

Days Test Performed: Weekly

Request Form: 1301 Test #257

Special Instructions: single specimen only

Specime and Volume:: 5 ml whole blood or 2 ml serum. [See venipuncture procedure if needed.](#)

Methodology: IFA

Interpretation: Positive and negative

CPT Code: 86747 each immunoglobulin

PESTICIDES - Contact Laboratory for information (803-896-0964)

PHENYLKETONURIA (PKU) - See "Newborn Screening"

PINWORM EXAMINATION

Synonyms: Enterobius vermicularis, Cellophane tape prep, Scotch tape prep

Test Section: Bacteriology/Parasitology, 803-896-0804

Days Test Performed: Monday - Friday

Request Form: 1334 Test #40300

Special Instructions: Use clear cellophane tape, collect first thing in the morning.

Specimen: See [pinworm prep collection procedure](#).

Container: microscope slide with collection tape

Storage/Shipping: Microscope slide mailing box

Causes for Rejection: Use of frosted cellophane tape, stool specimen; improper labeling

Use: Detection of pinworm eggs and adult worms

Methodology: Microscopic examination

CPT Code: 87172

PKU - See "Newborn Screening"

PREMARITAL PROFILE FOR OUT OF STATE LICENSES

Note: No premarital testing is required for South Carolina marriage license

Test Section: Diagnostic Serology, 803-896-0811

Days Test Performed: Monday-Friday

Request Form: 1301, 1359 - Indicate state where marriage will take place.

Special Instructions: Tests vary according to specific state ([See table 4, Section I for listing](#)).

Specimen: Whole blood or serum. [See venipuncture procedure if needed](#).

Volume: 2 ml blood or serum

Container: Red top vacuum tube

CPT Code: Syphilis - 86592; Rubella - 86762

PSEUDOMEMBRANOUS COLITIS - See "*Clostridium difficile*"

PVA PRESERVED FECAL SPECIMEN - See "Trichrome Stain"

RABIES EXAMINATION

NOTE: The Bureau of Laboratories is the only laboratory in S.C. which performs tests for rabies in animals. CDC performs all testing on human subjects. There is a special holiday and weekend on-call system for consultation and emergency testing that can be accessed by calling the main laboratory number, 896-0800.

Special Instructions: Contact the local county health department for information on specimen collection and shipping instructions. Confirmation is a postmortem procedure. Because standard procedure currently requires the examination of brain tissue, the suspect animal must either be sacrificed or have died before the examination can be performed. All county health departments maintain containers appropriate for shipping

specimens for examination, information on the management of animals suspected of being rabid, and can obtain vaccine for persons exposed to a rabid animal after consultation with the state epidemiologist.

Call prior to shipping specimen.

Test Section: - Virology, 803-896-0819

Days Test Performed: Monday - Friday; Saturday if human exposure involved

Request Form: 1308 Test #26000

Methodology: FA

Interpretation: reported as positive or negative.

All positive reports are called directly to the county health department, or after regular working hours,

to the county environmentalist who submitted the specimen.

Reasons for Rejection: No brain tissue or tissue decomposed or grossly contaminated

CPT Code: none

RESPIRATORY CULTURE, Viral

Synonyms: routine culture on throat washing or NP swab includes Influenza A & B, Parainfluenza I, II, III, and Adenovirus culture on a single specimen.

Test Section: Virology, 803-896-0819

Days Test Performed: Monday - Friday

Request Form: 1337 Test #27000

Specimen: Throat, N-P swab. [See collection procedure for viral culture.](#)

Container: Viral transport media provided upon request

Storage/Shipping: Ship **COLD** within 24-48 hours or freeze specimen and ship on dry ice

CPT Code: Culture, 87252; Identification, 87253

RESPIRATORY SEROLOGY, Viral

Synonyms: Influenza A & B; Parainfluenza I, II and III; Adenovirus; RSV; Mycoplasma

Test Section: Virology, 803-896-0819

Days Test Performed: Monthly

Request Form: 1301 Test #12500

Special Instructions: See separate listings

Specimen & Volume : 5 ml Whole clotted blood or 21 ml serum; acute and convalescent specimens required, 2 weeks between specimens. [See venipuncture procedure if needed.](#)

Container: Red top vacuum tube

RESPIRATORY SEROLOGY, Viral, CONT

Methodology: CF

Interpretation: A 4-fold or greater rise in CF titer (e.g, from < 1:8 TO 1:16, or from 1:32 to 1:128) between the acute and convalescent serum specimens is considered diagnostically significant. A titer of < 1:8 (or <1:2) means negative at the dilution.

CPT Code: 86171 each titer

RESPIRATORY SYNCYTIAL VIRUS SEROLOGY - See "Respiratory Battery, Viral@

RICKETTSIAL SEROLOGY (Rocky Mt. Spotted fever/Murine typhus)

Synonyms: Rocky Mt. Spotted Fever / Murine Typhus serology

Test Section: Virology, 803-896-0819

Days Test Performed: IFA Monday, Wednesday, Friday

Request Form: DHEC 1301 Test #2100

Special Instructions: Acute & convalescent sera needed, convalescent three weeks after onset of disease.

Specimen & Volume: 1 ml serum [See venipuncture procedure if needed.](#)

Container: Red top vacuum tube

Methodology: IFA

Interpretation: Single titers of 1:64 are considered borderline. Titers may be low or negative (1:64 or lower) if specimen was collected earlier than 10 days after onset. A 4-fold rise between paired sera is diagnostically significant.

CPT Code: 86256 each titer

RPR - See "Syphilis Serology (STS)"

RUBELLA SEROLOGY

Synonyms: German measles antibody, rubella immune screen, rubella IgG.

Test Section: IgM - Virology, 803-896-0819 IgG- Chemistry 803-896-0890

Days Test Performed: Monday - Friday

Request Form: DHEC 1336 - Prenatal screen, 3000 - Immunology Test #600

Special Instruction: Call prior to sending specimen for Rubella IgM antibody detection. Virology, 896-0819. Rubella IgG does not require calling.

Specimen & Volume: 2 ml whole clotted blood, or 1 ml serum or plasma. [See venipuncture procedure.](#)

Container: Red top vacuum tube is preferred.

Causes for Rejection: Improperly stored/shipped, or lipemia, or grossly hemolyzed, or contaminated specimens will not be tested.

Methodology: EIA.

Storage/Shipping: Store/ship specimen at 2-8°C so as to arrive at the lab within 7 days of collection. Beyond 7 days of collection, store/ship serum or plasma at -20°C.

CPT Code: 86762 (each immunoglobulin)

RUBEOLA VIRUS CULTURE-

Test Section: Virology, 803-896-0819

Days Test Performed: Monday - Friday

Request Form: 1337 Test #27000

Specimen: Throat washing [See respiratory virus culture procedure \(throat\).](#)

Special Instructions: Call prior to sending specimen

Container: Throat wash media provided upon request

Storage/Shipping: Ship cold within 24 - 48 hours or freeze specimen and ship on dry ice

CPT Code: Culture, 87252; Identification, 87253

RUBEOLA VIRUS SEROLOGY- See Measles Serology, Immune Status and Diagnosis(IgM)

SALMONELLA - See "Enteric Pathogens cultureA

SCABIES

Synonyms: Mites, Sarcoptes scabiei

Test Section: Bacteriology/Parasitology, 803-896-0804

Days Test Performed: Monday - Friday

Request Form: DHEC 1334 Test 41000

Specimen: Skin scrapings from infected area [See skin scrapings collection procedure for scabies.](#)

Special Instructions: Place skin scrapings in 1-2 drops of mineral oil on a glass slide and cover with a cover slip.

Container: Crush-proof slide holder

Storage/Shipping: Transport at room temperature in crush-proof double-walled mailer

Rejection Criteria: Specimens submitted in too much oil (several drops is too much), no name on specimen or name on specimen and on request form differ

Use: Detection of scabies

Methodology: Microscopic examination

CPT Code: 87210

SCHISTOSOME ANALYSIS

Synonyms: Schistosoma haematobium, urine for parasites

Test Section: Bacteriology/Parasitology, 803-896-0804

Days Test Performed: Monday - Friday

Request Form: 1334 Test #41000

Special Instructions: Collect last 15-20 ml of forced morning urine sample.

Specimen & Volume: 15-20 ml Urine

Container: Clean, dry, screw-capped tube

Storage/Shipping: Room temperature, double-walled mailing container

SCHISTOSOME ANALYSIS, CONT

Causes for Rejection: Stool submitted; improper labeling
Use: To detect the presence of *Schistosoma haematobium* in urine
Methodology: Microscopic examination
CPT Code: 87177

SCHISTOSOMIASIS SEROLOGY - See "Parasite Serology"

SCOTCH TAPE PREP - See "Pinworm Exam"

SHIGELLA - See "Enteric Pathogens Culture"

SICKLE CELL - See "Hemoglobin Electrophoresis"

SPOROTRICHOSIS SEROLOGY

Test Section: CDC Mycoses Immunodiagnostic Laboratory 404-639-3469
Days Test Performed: Referred to CDC
Request Form: CDC form
Specimen & Volume: 5 ml. Whole clotted blood or 2 ml. serum
Container: Red top vacuum tube. [See venipuncture procedure if needed.](#)

STAPHYLOCOCCUS- See "Enteric Pathogens Culture"

ST. LOUIS EQUINE ENCEPHALITIS - See "Arbovirus Serology"

STREPTOCOCCUS GROUP B - See "Beta-hemolytic Streptococcus, group B culture."

STREPTOCOCCUS PYOGENES (GROUP A) - See "Beta-Hemolytic Strep, group A"

SUSCEPTIBILITY TESTING - See "Mycobacterial Susceptibility "

SYPHILIS SEROLOGY SCREEN

Synonyms: RPR, Non-Treponemal Antibody.
Test Section: Diagnostic Serology, 803-896-0811
Days Test Performed: Monday - Friday
Request Form: 1359 Test #001 or @ 235, prenatal screen- form 1336 Test #205
Special Instructions: None.
Specimen & Volume: 2 ml whole clotted blood or 1 ml serum [See venipuncture procedure if needed.](#)
Container: Red top vacuum tube

SYPHILIS SEROLOGY SCREEN, CONT

Causes for Rejection: Improperly stored/shipped; grossly hemolyzed, or contaminated

Methodology: RPR quantitation performed on positives

Storage/Shipping: Store/ship specimen at 2-8°C so as to arrive in the lab within 3 days of collection.

CPT Code: 86592

SYPHILIS IgM (INFANTS ONLY)

Test Section: Virology 803-896-0819

Days Test Performed: Monday- Friday

Request Form: 1359. Must write in Test Number 14000 and Syphilis IgM

Special Instructions: Call Virology Section prior to sending specimen.

Specimen & Volume: 0.5 ml serum

Container: Red top Vacutainer

Methodology: EIA

CPT Code: 86781

T4 LYMPHOCYTES - See "Lymphocyte Subset"

TB CULTURE - See "Mycobacterial Culture"

TETRAHYDROCANNABINOL (THC) (MARIJUANA) - See "Cocaine & Marijuana Screen and Drugs of Abuse Screen, Urine"

THYROID PANEL (NON-NEONATAL AND CONFIRMATORY NEONATAL)

Synonyms: Total T4, T3 Uptake, TSH

Test Section: Toxicology/Clinical Chemistry, 803-896-0891

Days Test Performed: Monday and Thursday or when sufficient number of specimens warrant testing

Request Form: DHEC 1341 Test #91500; #91501 TOTAL T4; #91502 T3 UPTAKE; #91503 TSH; #91505 FTI (**FREE THYROXINE INDEX**)

Specimen Volume: 1-2 ml serum. [See venipuncture procedure if needed.](#)

Container: 7 ml red top vacuum tube

Causes for Rejection: Hemolysis, insufficient quantity, lipemia

Methodology: Enzyme Immunoassay Assay (EIA)

CPT Code: T4-84436; T3-84479; TSH-84443

TP-PA- See MHA-TP

TORCH BATTERY

No longer available, see individual tests.

CMV IgG test, #10800 for immune status, test #13900 for diagnostic.

Herpes I and II test #10900 for immune status, test #13600 for diagnostic.

Rubella IgG, test #10500 for immune status, test #10600 for diagnostic.

Toxoplasmosis Serology is not offered.

TOXOCARA - See ~~A~~Parasite Serology@

TOXOPLASMA SEROLOGY- See ~~A~~Parasite Serology@

TREPONEMAL ANTIBODY SEROLOGY - See ATP-PA test"

TRICHINOSIS - See "Parasite Serology"

TRICHROME STAIN

Synonyms: Giardia stain, Amoeba (stool exam)

Test Section: Bacteriology/Parasitology, 803-896-0804

Days Test Performed: Monday - Friday

Request Form: DHEC 1334 Test #40200

Special Instructions: PVA specimen preferred. Fresh specimen less than 1 hour old.

Specimen: Fresh stool specimen less than 1 hour old or stool preserved in PVA, LV-PVA

Volume: "Walnut" size formed specimen or 2 tbsp liquid specimen mixed well in preservative

Container: Leak-proof screw-cap tube

Storage/Shipping: Double wall mailing container

Rejection Criteria: Insufficient quantity; inadequate mixing of stool and preservative; stool preserved in 10% formalin, SAF, or MIF; fresh stool specimen more than 1 hour old

Use: Detection of protozoan cysts and trophozoite stage.

Methodology: Microscopic examination of stained smears.

CPT Code: 88313

TUBERCULOSIS CULTURE - See "Mycobacterial Culture"

TULAREMIA SEROLOGY

Test Section: Referred to CDC Contact Bacteriology/Parasitology, 803-896-0805

Request Form: CDC Form

Specimen: Serum or whole blood (red top tube) [See venipuncture procedure if needed.](#)

Volume: 2 ml of serum

Interpretation: Printed on CDC report

CPT Code: 86000

URINE LEAD ANALYSIS- See Lead, Urine

VARICELLA VIRUS CULTURE

Test Section: Virology, 803-896-0819

Days Test Performed: Monday - Friday

Request Form: DHEC 1337 Test #27000 - Please indicate virus suspected on form.

Special Instructions: Notify Viral Isolation lab prior to submitting specimen

Specimen: Vesicle fluid

Storage/Shipping: Ship cold within 24 hours after collection

CPT Code: Culture, 87252; Identification, 87253

VARICELLA VIRUS SEROLOGY

Synonyms: Immune Status - Single Specimen - EIA/ or Diagnostic - Paired Sera/or Exanthem Battery

Test Section: Virology, 803-896-0819

Days Test Performed: Weekly

Request Form: 1301 Test #11000 for Immune Status. Test #13700 for diagnostic.

Special Instructions: Please call Virology, 896-0819 prior to sending specimen from a pregnant patient who has been exposed to varicella.

Specimen: Whole clotted blood or serum. Single specimen for immune status, paired for diagnostic.

Volume: 5 ml blood or 2 ml serum [See venipuncture procedure if needed.](#)

Container: Red top vacuum tube

Methodology: EIA

Interpretation: Immune status: Positive, negative or equivocal; diagnostic results are positive, negative or equivocal with comment attached when needed indicating current infection.

CPT Code: 86787

VDRL

Test Section: Virology, 803-896-0819

Days Test Performed: Once a week

Request Form: 1359 Test #203

Specimen & Volume: 0.5ml -1.0 ml CSF only

Methodology: Slide flocculation

Interpretation: Reactive or non-reactive

CPT Code: 86592

VIBRIO - See " Enteric Pathogens Culture"

VIRAL CULTURE (ROUTINE)

Test Section: Virology, 803-896-0819

Days Test Performed: Monday-Friday

Request Form: 1337 Test#27000

Use: For virus culture other than for Herpes, Influenza or CMV.

Specimen: CSF, TS, NP, RS, Stool, Tissue, BW, bone marrow and blood in EDTA tubes

[See virus culture collection procedures.](#)

Storage/Shipping: Send cold (on wet ice or ice packs) within 24-48 hours after collection.

CPT Code: Culture, 87252; Identification, 87253

VIRAL ISOLATE FOR IDENTIFICATION

Test Section: Virology, 803-896-0819

Days Test Performed: Monday-Friday

Request Form: 1337 Test #27500

Specimen: Tissue Culture Isolate

Storage/Shipping: Please call prior to shipping (phone 896-0820).

CPT Code: 87253

VISCERAL LARVA MIGRANS - See "Parasite Serology"

WEST NILE VIRUS SEROLOGY- IgG/IgM

Test Section: Virology, 803-896-0819

Days Test Performed: As needed. Call prior to sending specimen

Request Form: Use viral serology form # 1301 and write test in blank space.

Specimen: CSF (10 days after onset); or Paired serum taken 10 and 20 days after onset.

Methodology: EIA

Storage/Shipping: Please call prior to shipping (803- 896-0819).

CPT Code: 86790

WESTERN EQUINE ENCEPHALITIS - See "Arbovirus Serology"

WHOOPING COUGH - See "Bordetella pertussis"

YEAST - See "Fungal Culture"

YERSINIA - See >Enteric Pathogens Culture@

SECTION IV

**TEST FEES AND
BILLING PROCEDURES**

FEE POLICY

The Bureau of Laboratories is only partially supported by legislative appropriations from State Funds. Therefore, we have been authorized to charge fees under certain conditions.

1. TEST FEES:

A fee is charged for those tests which benefit only the individual patient or which are readily available from private sources. A list of current billable tests and charges follows.

No fee is charged for tests considered Public Health Testing. These are paid for by tax monies.

Exempt from charges:

- A. Tests that are not reasonably available from qualified private laboratories
- B. Tests whose result is primarily of epidemiologic or public health significance.
- C. Tests run as a matter of bureau policy which are not requested by the physician.
- D. When the patient is medically indigent.

In this case, the physician will be billed, but may deduct the charges before remitting.
See billing procedures.

- E. Repeat tests for Newborn Screening.

If the initial test was requested by the Bureau of Laboratories, i.e., initial test was invalid due to early dismissal, or improperly collected specimen or insufficient quantity or other reason, there is no charge for the repeat test.

All other second or repeat tests are subject to the full fee.

2. REFERENCE CULTURES:

Reference cultures are maintained in bacteriology, mycology, parasitology, and mycobacteriology, and are available, upon request, for reference and control cultures.

Cultures are supplied without charge upon the first request. Repeat requests for the same organism within one year will be subject to a charge of \$15.00

3. RETRIEVAL OF RECORDS:

When minimal time (less than 15 minutes) is required to retrieve and copy requests for laboratory documents or records, no charge will be levied.

Requests for laboratory documents or records requiring more than 15 minutes retrieval and copy time, will be assessed a charge of \$20.00/ hour.

THIS PAGE INTENTIONALLY LEFT BLANK

INSERT TEST CHARGES
PRIVATE SECTOR
DHEC PROGRAMS

BILLING PROCEDURE

Bills are generated monthly and provide a line listing of patients and tests..

Bills are generated by [Sender and/or Billing number](#). These can be obtained by calling 896-0810.

Do not send payment with the specimen. PAY ONLY WHEN YOU RECEIVE A BILL.

Please do not send cash payments.

The bill will consist of two copies:

The blue and white [Remittance](#) copy must be returned with your payment for proper crediting of your account. The yellow [Provider](#) copy should be retained for your records.

On the left side of the bill there is a column headed [Eligible for NON payment](#).

In this column, please place a [X](#) beside the name of any patient listed who is considered to be unable to pay for the test, ie indigent. Place the total charges for patients eligible for non-payment in the indicated space at the upper right-hand corner of the bill and deduct this amount from the total charges. Please indicate the amount remitted.

Billing is done through the DHEC Bureau of Finance, not the Laboratory. If an error is found on the bill, please write comments on the face of the bill or an attached sheet of paper and the problem will be corrected. You may also contact the DHEC Receivable Bureau of Finance at 898-3450 or the Bureau of Laboratories at 896-0942.

Delinquent accounts are subject to having test results withheld until the account is paid in full.

BUREAU OF LABORATORIES SERVICES GUIDE

INDEX

Abcess culture- see Bacterial culture	III-7
Acanthamoeba culture- see Amoeba Culture	III-4
Accreditation.....	I-4
Acid Fast Bacilli culture (AFB)- See Mycobacterial culture	III-34-35
Address of Bureau of Laboratories	I-1
Adenovirus culture	III-3
Adenovirus serology	III-3
Aerobic actinomycetes culture- See fungal culture	III-16
Aerobe referred for identification	III-4
AIDS Testing, See HIV	III-24-26
Alcohol screen- See Drugs of Abuse screen	III-14
Amoebae culture	III-4
Amphetamines screen- See Drugs of Abuse	III-14
Anaerobe referred for identification	III-5
Antibiotic susceptibility testing for M. TB.....	III-35
Arbovirus serology	III-5
Asbestos- Air-Sampling	III-6
Asbestos-Bulk sampling	III-6
<i>Bacillus cereus</i> - See Enteric pathogens culture	III-15
Bacterial isolate referred for ID - See aerobe or Anaerobe referred for ID.....	III-4,5
Barbiturate screen- See Drugs of Abuse	III-14
Benzoyl Ecgonine- See Cocaine & Marijuana screen	III-11
Beta hemolytic <i>Streptococcus</i> , Group A culture... ..	III-7
Collection procedure for throat swab	II-17
Beta-hemolytic <i>Streptococcus</i> , Group B culture	III-8
Collection procedure for vaginal culture	II-24
Billing procedure	IV-3
Billing numbers	II-5
Blood Lead- see lead analysis, blood.....	III-28
Collection procedure.....	II-11
Blood smears for blood parasites- See Malaria smear	III-32
<i>Bordetella pertussis</i>	III-8
Collection procedure	II-25
Botulism.....	III-9

<i>Campylobacter</i> see Enteric pathogens culture	II-15
Capillary blood collection for Blood lead, capillary microtainer	II-11
Capillary blood, collection for Newborn screening, Heel-stick	II-8
Capillary blood, collection for HIV testing, Finger stick for dried blood spots	II-10
CD4- See Lymphocyte Subset	III-30
CDC, specimens referred to.....	I-6
Certification of laboratory	I-4
Chagas disease -See parasite serology	III-40
Chain-of-Custody protocol for Drugs.....	III-10
Collection procedure using COC	II-61
Charges for laboratory services	IV-2
Chemistry panels for DHEC clinics	III-1
<i>Chlamydia trachomatis</i> culture	III-10
Collection procedure.....	II-31
Chlamydia antigen detection by Gen-Probe	III-10
Collection procedure for Gen-Probe procedure.....	II-52
<i>Clostridium difficile</i>	III-11
CMV- See Cytomegalovirus culture or serology	III-13
Cocaine & marijuana screen, urine.....	III-11
Chain of custody Collection procedure	II-61
Congenital Adrenal Hyperplasia- see Newborn Screening	III-37
<i>Corynebacterium Diphtheria</i>	III-12
County codes	II-4
Coxsackie A & B virus culture- See Enterovirus culture	III-15
<i>Cryptococcus neoformans</i> - See Fungal culture	III-16
Cryptosporidium stain	III-12
Culture collection procedures	II-14-61
Cyclospora	III-12
Cysticercosis- See Parasite serology	III-40
Cytomegalovirus culture	III-13
Cytomegalovirus serology	III-13
Dairy products examinations	III-14
DHEC Program numbers	II-6
Diphtheria -See <i>Corynebacterium diphtheria</i>	III-12
Collection procedure (throat culture)	II-17
Disease reporting	I-9
Drugs of Abuse screen, urine	III-14
Chain-of-custody collection protocol	II-61
<i>E.coli 0157</i> culture- see Enteric pathogens culture	III-15
Eastern Equine Encephalitis- See Arbovirus Serology	III-5
ECHO virus - See Enterovirus culture.....	III-15
Echinococcus- See parasite serology	III-40

Enteric pathogens culture	III-15
Collection procedure	II-14
<i>Enterobius Vermicularis</i> - See Pinworm Exam	III-41
Enterovirus culture.....	III-15
Collection procedure for stool culture.....	II-47
Collection procedure for throat culture	II-17
Environmental Lead- see Lead, environmental	III-28
Filariasis- See parasite serology	III-40
Fluorescent Treponemal Antibody (FTA)	III-16
Food-borne illness (Food poisoning).....	III-16
Fungal culture & Identification	III-16
Collection procedures for dermatophytes.....	II-35
Sputum collection procedure	II-37
Fungal specimen referred for identification	III-17
Galactosemia- see Newborn Screening	III-37
Gen-Probe antigen detection for GC & Chlamydia -see Chlamydia antigen detection	III-10
& Gonococcal antigen detection.....	III-18
Collection procedure	II-52
German measles - See Rubella serology	III-43
Giardia- See Parasite exam or Trichrome stain	III-39,47
Gonorrhea (GC) Antigen detection	III-18
Gonorrhea Culture	III-18
Collection procedure	II-27
Gonorrhea smear	III-19
Group A Streptococcus Culture- See Beta-Hemolytic Streptococcus Group A culture... ..	III-7
Group B Streptococcus culture- See Beta-Hemolytic Streptococcus Group B culture	III-8
Hantavirus Serology- IgG/IgM	III-19
Heavy Metal analysis- See individual metals	
Hemoglobin (Hb) Electrophoresis	III-20
Hemolytic Anemia- see Hemoglobin Electrophoresis	III-20
Hepatitis A Serology	III-20
Hepatitis B Serology	III-21-23
Hepatitis C Serology	III-23
<i>Herpes simplex</i> culture	III-23
Collection procedure.....	II-49
Herpes Serology.....	III-24
<i>Histoplasma capsulatum</i> See Fungal culture	III-16
HIV-1 PCR Qualitative (DNA)	III-24
HIV-1 PCR Quantitative (RNA)	III-25
HIV-1 Serology	III-25
Dried blood spot collection procedure	II-10
Hookworm - See parasite examination, (O&P)	III-39
INDEX, PAGE 4	

Hours of business	I-1
Hypothyroidism- See Newborn screening & Thyroid panel	III-37,46
Influenza virus culture	III-27
Influenza virus serology	III-27
Laboratory address and business hours	I-1
Laboratory Organization and contact persons	I-2
Lead analysis, Blood	III-28
Lead analysis, Environmental	III-28
Lead analysis, Urine	III-28
Legionella culture	III-28
Legionella FA	III-29
Legionella serology	III-29
Leishmaniasis- See parasite serology	III-40
Leptospirosis	III-30
Lyme disease.....	III-30
Lymphocyte subset	III-30
Lymphocytic Choriomeningitis serology	III-31
Mailing specimens to Lab	II-65
Mailing address for Bureau of Laboratories	I-1
Mailing Containers	II-1
Malaria- See parasite serology	III-40
Malarial smear	III-32
MCADD see Newborn screening	III-37
Measles (Rubella) serology- See rubella serology	III-43
Measles (Rubeola) serology	III-32
Measles (Rubeola) culture- see Rubeola virus culture	III-44
MHA-TP	III-33
Microsporidium stain	III-33
Mites- See scabies.....	III-44
Mold Culture- See Fungal culture	III-16
Mumps virus culture	III-34
Mumps virus serology	III-34
Murine Typhus serology- See Rickettsial serology	III-43
Mycobacteria	
Culture & ID	III-34-35
Referred specimen for ID	III-35
Susceptibility testing	III-35
Collection procedures	III-39
Mycoplasma/Ureaplasma	
Culture	III-36
Collection procedure	II-45
Serology	III-36

INDEX, PAGE 5

Naegleria culture- See Amoebae culture	III-4
--	-------

<i>Neisseria gonorrhoeae</i> - See Gonorrhea culture	III-18
Collection procedure	II-46
Newborn screening	III-37
Collection procedure, Heel-stick	II-8
Ordering Test Request forms	II-2
Ordering supplies and collection kits	II-1
Ova & Parasites examination (O&P) - see parasite exam	III-39
Packaging specimens for shipment to lab	II-65
Parainfluenza virus culture	III-39
Parainfluenza serology	III-39
Parasite examination,	
General (O & P)	III-39
Collection procedure	II-55
Identification of proglottid or worm	III-40
Pinworm	III-41
Cellophane tape collection procedure	II-58
Malaria Smear	III-32
Serology	III-40
Parvo virus IgG/IgM serology	III-40
Phenylketonuria (PKU) - See newborn screening	III-37
Pinworm examination-	III-41
PKU- See newborn screening	III-37
Poliomyelitis- See enterovirus culture	III-16
Premarital testing for out of state licenses	I-8, III-41
Pseudomembranous colitis- See <i>Clostridium difficile</i>	III-11
PVA preserved fecal specimen for parasitology - See Trichrome stain	III-47
Rabies examination	III-42
Reference cultures	I-9
Reimaging results	I-10
Repeat testing, requesting on serology specimens	II-5
Repeat testing, billing policy	I-10
Respiratory culture, Viral	III-42
Collection procedure	II-17
Respiratory Serology, viral	III-42
Respiratory Syncytial virus serology - See Respiratory serology, viral	III-42
Results reports	I-10
Rickettsial serology, RMSF and MT	III-43
Ringworm- see Fungal culture	III-16
Collection procedure, hair, skin and nails	II-35
Rocky Mountain Spotted Fever serology - See Rickettsial serology	III-43
RPR - see Syphilis serology (STS)	III-45

INDEX, PAGE 6

Rubella Serology	III-43
Rubeola virus culture	III-44

Rubeola Serology - See measles serology	III-32
Salmonella- See Enteric pathogens culture	III-15
Scabies	III-44
Collection procedure, skin scrapings	II-60
Schistosome analysis	III-44
Schistosomiasis serology - see parasite serology	III-40
Scotch Tape prep for pinworm - See Pinworm exam	III-41
Sender number, obtaining	II-6
Shigella- See Enteric pathogens culture	III-15
Shipping specimens to lab	
via U.S. Mail	II-65
via personal delivery	II-68
via private courier	II-69
Sickle Cell - See Hemoglobin Electrophoresis and Newborn Screening	III-20,37
Skin scrapings for Scabies	II-60
Specimen rejection criteria	I-7
Sporotrichosis serology - See parasite serology	III-40
St. Louis Equine Encephalitis - see Arbovirus serology	III-5
Staphylococcus- see enteric pathogens culture	III-15
Stock Reference cultures	I-9
Stool culture for enteric pathogens - see Enteric pathogens culture	III-15
Collection procedure	II-14
Streptococcus Group A (Pyogenes)- see beta-hemolytic Streptococcus, Group A	III-7
Streptococcus Group B - see Beta-hemolytic Streptococcus ,Group B culture	III-8
Supplies, obtaining	II-1
Susceptibility Testing for mycobacteria- See Mycobacteria, susceptibility	III-35
Syphilis serology Screen (RPR)	III-45
Syphilis IgM	III-46
T4 lymphocytes- see Lymphocyte subset	III-30
TB culture- See Mycobacteria, culture & ID	III-34-35
Test fees	IV-2
Test panels & profiles for DHEC clinics	II-1-2
Test request forms, instructions for completing	II-3
Test request forms, ordering	II-2
Tetrahydrocannabinol (THC) (Marijuana)-See Cocaine & Marijuana screen & Drugs of Abuse screen	
Thyroid panel, non-neonatal & confirmatory neonatal	III-46
TORCH battery	III-47
Toxocara - see parasite serology.....	III-40
Treponemal antibody serology- See MHA-TP.....	III-33

INDEX, PAGE 7

Trichinosis - see parasite serology	III-40
Trichrome stain	III-47
Tuberculosis culture- see Mycobacteria, culture & ID	III-34,35
Tularemia	III-47
Ureaplasma- see Mycoplasma/Ureaplasma culture	III-36
Collection procedure	II-45
Urine Drug analysis - See Drugs of Abuse, urine	III-14
Urine lead analysis- see lead analysis, urine	III-28
Varicella virus culture	III-48
Varicella serology	III-48
VDRL	III-49
Vector Control	I-9
Venipuncture procedure	II-7
Vibrio- See Enteric pathogens culture	III-15
Viral culture, routine	III-49
Viral isolate for ID	III-49
Visceral Larva Migrants- See parasite serology	III-40
West Nile Virus Serology	III-49
Western Equine Encephalitis- See arbovirus serology	III-5
Whooping Cough- See <i>Bordetella pertussis</i>	III-8
Wound culture- See Bacterial culture, misc. Clinical specimen	III-7
Collection procedure	II-22
Yeast- See Fungal culture	III-16
Yersinia- See Enteric pathogens culture	III-15